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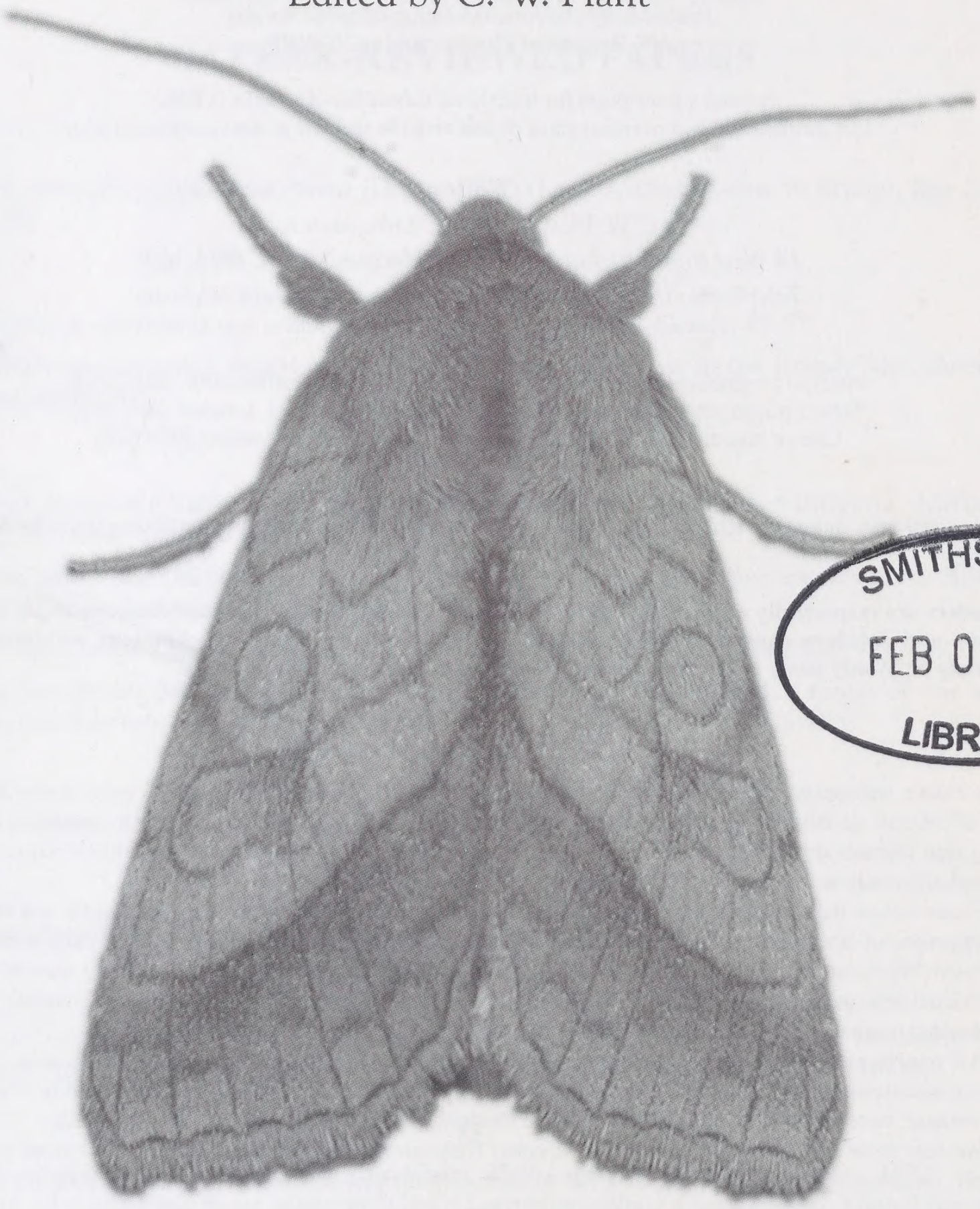
Edited by C. W. Plant



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The Entomologist's record is now printed in full colour, enabling us to accept a wider range of illustrative and interpretative material. This development has been made possible by a generous bequest by the late Andy Callow.

Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

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Please follow the format in this issue; if in doubt, ask the Editor. We positively encourage the use of colour photographs of insects and their habitats but their inclusion must enhance the text or serve some other useful purpose. We encourage the use of colour in the interpretation of graphs, charts etc. All images must be sent as individual separate files; please send high resolution files – do not reduce file size for ease of e-mailing. Images embedded (pasted into) word processor files cannot be used.

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The Entomologist's record is now printed in full colour, enabling us to accept a wider range of illustrative and interpretative material. This development has been made possible by a generous bequest by the late Andy Callow.

Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

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NEWS FROM THE NATIONAL RECORDING SCHEMES

Gelechiid Recording Scheme

The publication of the *Field Guide to the Micro Moths of Great Britain and Ireland* by Sterling, Parsons and Lewington (British Wildlife Publishing) in 2012 has been a great success, not least in introducing a much wider audience to the smaller moths. Even better, it is pleasing to report that this upsurge in interest has not been restricted to the larger or more attractive micro-moths, even the Gelechiidae have benefitted!

Despite their reputation, not all moths in this family are small, brown and rather similar looking. One of the better known is *Hypatima rhomboidella* (L.), a moth readily attracted to light traps; Figure 1, produced using *MapMate*, shows the records received to date by 10km squares map for this moth. With its larva feeding on birch *Betula* sp. and Hazel *Corylus avellana* it is likely to occur in most mainland 10km squares in the British Isles. At the opposite end of the spectrum is one of the rarer moths in this family, *Caryocolum blandelloides* (opposite). Despite being intricately marked it can be rather tricky to identify and is found only on extensive coastal dunes in the Inverness area. It is quite difficult to track down, but during 2013 it was located in a new area east of Inverness by rearing the larvae. Two very different moths and two very different methods of locating them, demonstrating the value of employing different recording techniques when studying this family.

By early December 2013, the database had increased to just over 90,000 records including full sets of records from 72 of the 113 Vice Counties in the UK and Channel Islands. Additionally, several datasets from individual recorders and a large set of data from Ireland have been invaluable in extending the geographical range covered by the Scheme. Research has added an increasing mix of historic data, with all records found as a result of the various Museum visits being made available to County Moth Recorders in excel file format (please get in touch if you want more details). It has also been found that this data is adding 'new' county or vice county records; these are being added to the national maps and a full table of additions are listed on the website

(*www.gelechiid.co.uk*). Details of these are available on request. A breakdown of the data entered by 10 December 2013 is shown below.

Up to 1899 – 1663 records

1900 to 1949 – 2886 records

1950 to 1999 – 22,800 records

2000 to 2013 – 62,654 records

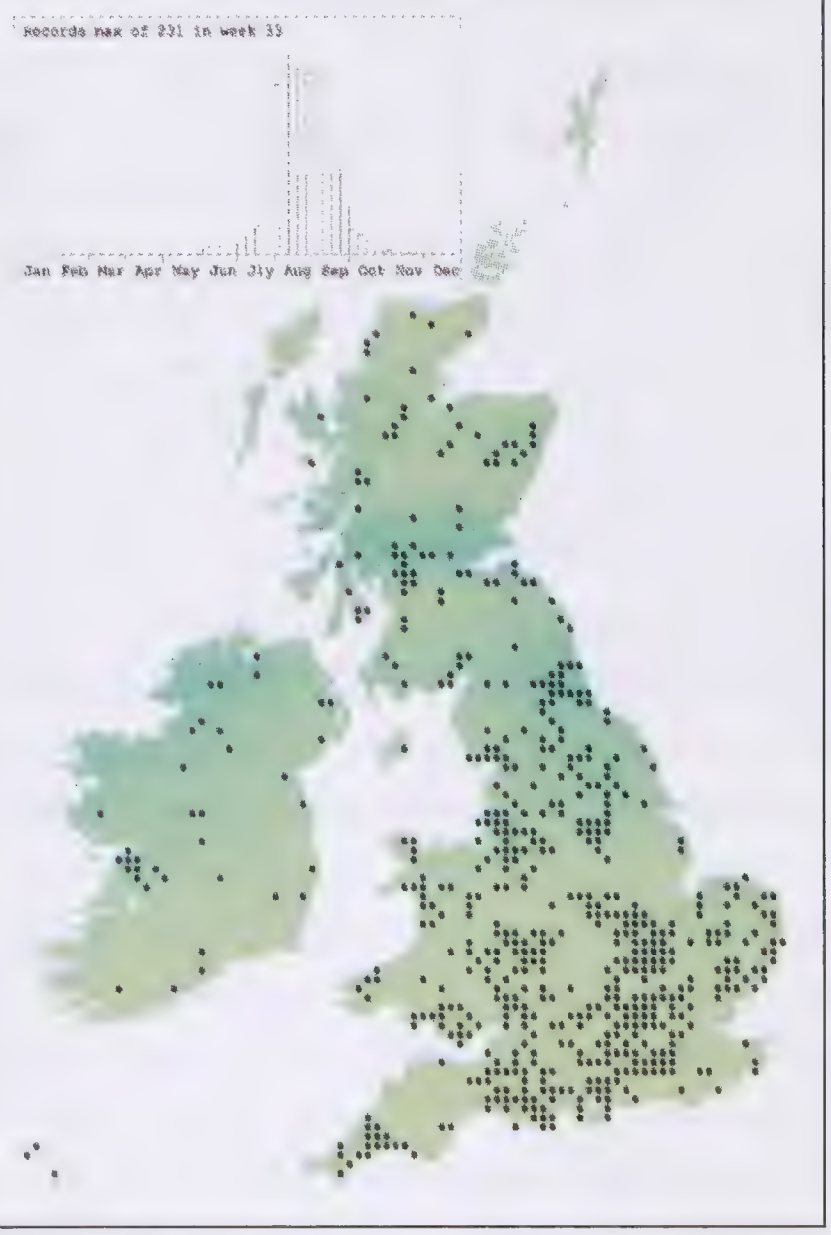
With such a wealth of detailed information now available from over half of the Vice Counties of the whole British Isles it has been possible to start looking at the broader picture of how our gelechiid fauna is faring. One simple check has been to look for recent records of the 162 species. Since entering the 21st Century, 147 species have been noted in at least one year and of these a good proportion occurred in almost every year to date. Thirty-nine of them were found in fewer than half of the 14 year period, perhaps more an indication of the retiring habits or local nature of these moths, than their scarcity? Those few with very specific habitat requirements, particularly those associated with food-plants which are in decline, are of most concern. Of the remaining 16 species not seen since 1999, as many as 13 may be extinct (many have been the subject of detailed searches during the 1990s). The remaining three are extremely local and usually need to be specifically searched for – *Neofriseria pelliella* (last recorded in 1997), *Gelechia turpella* (1998) and *Caryocolum blandulella* (1982). The Scheme would particularly welcome historic or more recent records of any of these three species.

With most effort still being directed to researching and entering records, the GRS website (*www.gelechiid.co.uk*) species accounts are lagging behind a bit – we hope to address this over the coming year. However, during 2013, we have added several new features and links to the site, including plant distribution maps and adult and larval occurrence (phenology) graphs. The plant maps can be found on the 'Feeding' page showing the geographical range of the main larval food-plant (if known or appropriate) for most species. It is hoped that many of these will be of use when deciding if a species is worth searching for in your area, as an adult or a larva.

An additional and very welcome feature for the website has been the generous submission of many photographs of both live moths and, more recently, set specimens. Good quality photographs of any of the Gelechiid species are always welcome, as are those of habitat, larva, larval feeding signs and others.

At present, updates of the on-line distribution maps are only occurring once every year or so; the last one was at the end of 2012 and the next upload is planned for February 2014. Records are welcomed from all recorders who should, whenever possible, submit them via their County Moth Recorder with a request to forward the data onto the GRS. If this is not possible then do please forward them direct to us as Scheme organisers. We would particularly welcome data from the forty or so County Moth Recorders (CMR) who have so far not contributed to the Scheme. If data is digitised but there are uncertainties about the accuracy of records then do please send

Fig. 1. Distribution of *Hypatima rhomboidella*.



on the records anyway. We are more than happy to help by highlighting species that need verification or where details suggest misidentification may have occurred. Details of our Records Policy and how to submit records can be found on the website.

During 2013 the Scheme was approached by the Centre for Ecology and Hydrology at Wallingford (who host the website), to carry out a project to create Record Cleaning Software covering the Gelechiidae. This involves producing a set of background data and specific rules (based on features such as geographical distribution, flight period, habitat and difficulty of identification) that will allow the software user to assess whether a record is likely to require verification and, if so, what proof of identity is required. Further information on this will be available via the National Biodiversity Network, who commissioned the work, once the project is complete.

With the dramatic improvement of the weather for many of us during last summer, early indications are that we are in for a bumper set of records and also some significant finds during 2013. We are most grateful to the many providers of records and photographs over the past twelve months, to CEH for their continued support of the Scheme and to Butterfly Conservation (Les Hill) for storing regular updates of the scheme data.

The publication of the new *Checklist of the Lepidoptera of the British Isles* by Agassiz, Beavan and Heckford in December 2013 has led to a change in the taxonomic order within the Gelechiidae and added a new numbering system. Details of the latter will be incorporated into the Scheme website over the coming months. Other changes detailed are the removal of *Sophronia humerella* from the British list, with records considered doubtful and that British records of *Scrobipalpa salinella* (now considered a Southern European species) are believed to refer to *Scrobipalpa salicorniae* (see Huemer & Karsholt, 2010. *Microlepidoptera of Europe 6: Gelechiidae part II* : 180-182. Apollo Books). It should however be noted that the distinction between these two species still has to be confirmed by DNA studies.

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National Moth Recording Scheme

The National Moth Recording Scheme (NMRS) was established in 2007 with funding from the Heritage Lottery Fund and many other partner organisations through Butterfly Conservation's Moths Count project. The aim of the NMRS was to set-up a recording scheme for macro-moths in the UK, Channel Islands and Isle of Man. Verified moth records come to the NMRS via the existing network of County Moth Recorders and in some counties via local record centres working closely with County Moth Recorders. The NMRS does not accept records from any other sources. The network of County Moth Recorders is integral to the success of the NMRS due to the specialist moth knowledge, expertise and dedication of these volunteers.

Since the start of the scheme, the NMRS has amassed some 16.1 million occurrence records for 880 macro species. The most widespread species is Large Yellow Underwing *Noctua pronuba* (L.) occurring in 2404 (*c.* 80%) of the 10km x 10km grid squares. Up-to-date provisional distribution maps for all of the species recorded in the NMRS can be viewed on the Moths Count website (*www.mothscount.org*).

In addition to the online maps, the data collected through the NMRS has been used to provide feedback to the moth recording community in the form of annual newsletters, electronic updates and an annual moth recorders' meeting, to assess species distribution change over time and to inform local and national conservation priorities.

Our conservation partners are using the NMRS data via the NBN Gateway and we are also collaborating with researchers to explore patterns in land-use and species distribution change. The NMRS data were used as corroborative evidence to support moth population trends in the *State of Britain's Larger Moths* report which was published in February 2013 and also played an important role in the landmark *State of Nature* report published by 25 leading wildlife organisations in May 2013. One of the major outputs of the NMRS was the publication of the *Provisional Atlas of the UK's Larger Moths* in December 2010. The maps in this book were based on the 11.3 million records held by the NMRS at the time.

After a long development process, the NMRS online recording system is due to go live in January 2014 and will be available for recorders to use at *www.mothscount.org*. All records entered on this system will be repatriated to County Moth Recorders for verification and amalgamation into local datasets, prior to submission to the NMRS.

It has always been the intention of Butterfly Conservation to produce a full hardcopy atlas of the larger moths, but the timescale was dependent upon the progress of the NMRS. The scheme has been so successful that we now plan to work towards the publication of the national atlas of macro-moths towards the end of 2018. It will be

based on data up to the end of 2016, giving moth recorders across the land three more full years of fieldwork. There is a considerable amount of work to be done between now and the end of 2016; the historical baseline of the NMRS needs to be improved and targeted recording of under-recorded squares is another challenge. However, we hope that making this announcement now will stimulate further recording effort and encourage County Moth Recorders, local moth groups and moth recorders themselves to redouble their efforts to achieve the best possible coverage of the country. If there are any queries or issues where we might be able to provide support please get in touch with ZR.

The Moths Count project is supported financially by The Redwing Trust, Natural England, Forest Services, Forestry Commission England, Natural Resources Wales, Northern Ireland Environment Agency, Royal Entomological Society, Scottish Natural Heritage and many other individuals and partners.

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Leaf-mining Moth Recording Scheme

The Leaf-mine Recording Scheme database holds records of over 300 leaf-mining moth species; it continues to expand and now has 287,000 records incorporated. I continue to be very grateful to those individuals and County Recorders who send me their records each year as this enables me to map and regularly update species distributions on the web site (*www.leafmines.co.uk*). The maps have been updated seven times during 2013.

The large number of records in the leaf-miner scheme database means that a reasonable indication can be given of the distribution of many leaf-mining species in the UK, but there are still gaps. Readers are invited to help plug some of those gaps in 2014. Ideally, send records as a Map Mate "sync" (set your filters to the National Leaf-mine scheme; the scheme's cuk is 1rx). You can, of course, also submit records in other formats, such as MS Excel (a copy of the spreadsheet available to download from *http://www.leafmines.co.uk/html/nlls.htm*. This section of the website also gives guidance on how to submit records to the scheme).

The advent of the new species checklist means that nomenclature will change for some species. For the time being, please continue to submit your records using the

familiar Bradley names. Once the Map Mate software has been updated it will become possible to receive your records using the new nomenclature.

I am grateful to Barry Dickerson who continues to expand and refine the identification keys on the website; these can be found at *http://www.leafmines.co.uk/html/Mine_Guide.htm*. The keys print out as a pocket sized guide and I know that many people find these very useful.

Please feel free to contact me of you have any queries about the Leaf-mine Recording Scheme or need help with identification.

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Lacewing and Allies Recording Scheme

The British Isles (including Ireland) recording scheme for Neuroptera, Megaloptera, Raphidioptera and Mecoptera is about to break its diapause. If you would like to be on the mailing list for e-mailed newsletters please send a blank e-mail to cpauk1@ntlworld.com putting the words "NEUROPTERA NEWS" in the subject line.

County Moth Recorders

A full list of County Moth Recorders was published in this journal in January 2012 (volume 124, pages 1-10); the following changes to that list have been notified to the Editor:

VC59 & 60 South Lancashire & West Lancashire

Steve Palmer has retired as micro recorder for both vice-counties. John Girdley (*john@birdtours.co.uk*) has taken over from Steve as the micro-moth recorder for VC 60 whilst Pete Marsh (Leck View Cottage, Ashley's Farm, High Tatham, LA2 8PH; Email: *pmrsh123@aol.com*) has now filled the formerly vacant position of macro-moth recorder for VC 60. Unfortunately, both posts appear to remain vacant for VC 59.

Unusual variation of *Argyresthia* (Lep.: Yponomeutidae) in London

On the night of 23 July 2012 I caught a single example of an unfamiliar *Argyresthia* species at mv light in my garden in Hackney, north-east London. Since I was unable to name the moth, it was photographed (Plate 1) and the image was e-mailed to the Middlesex County Moth Recorder, Colin Plant, for an opinion. The moth escaped and so is not available for genitalia examination.

Plate 1. *Argyresthia* ?*brockeella* (Hb.), Hackney, 2012. Photo: M. Gandy

Colin was at a loss to put a name to the moth. Subsequent discussion between Colin Plant, Rachel Terry and David Agassiz confirmed the view that there is no known *Argyresthia* species, including potential adventitious species, that has this pattern of markings. The possibility that it might be a form of *A. ivella* (Haw.) was discussed, though the wing pattern is not totally convincing. Current opinion is that this moth is likely to be a variation of *Argyresthia brockeella* (Hübner), but in view of its apparently unique morphology it seems sensible that the image is shared in the pages of this journal on the off-chance that someone else, somewhere, has a named specimen with the same markings. If they have, I would be delighted to hear from them.

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Dingy Footman *Eilema griseola* (Hb.) (Lep.: Arctiidae): Second record for Scotland

Alison Robertson put her trap out at Bowhouse Park, near Caerlaverlock (O.S. grid reference NY 019655, VC 72) the home of her brother-in-law, on 1 August 2013. On this occasion she used a 15-watt actinic lamp (Heath trap), which was positioned on top of a drystane dyke overlooking the drainage ditch and in full view of the wood. She places traps here two or three times a year, attracted by the range of habitats. There are fields to three sides, one with a small wetland area where a drainage ditch passes through while across the road is ancient semi-natural woodland. Just 300m to the south is the start of the merse (saltmarsh) which borders the tidal River Nith.

Plate 1. Dingy Footman *Eilema griseola* (Hb.), Bowhouse Park, Caerlaverlock, Dumfriesshire – the second example of this species to be recorded in Scotland.

Of the 34 species present, Alison noticed a Footman which she thought was a Buff Footman *Eilema depressa* and having only seen a few before, took a photo of it and e-mailed it to me. Upon seeing it, I was amazed at the strongly arched costa on the broad forewing and suspected Dingy Footman. Knowing that there was only one other record of its occurrence in Dumfries & Galloway and Scotland, I e-mailed the photograph to Roy Leverton, the keeper of the Scottish macro-moth list, who confirmed my suspicions.

The only previous record for Scotland was of one found at Holmhead on Lochar Moss, Dumfriesshire (NY 049706, VC 72) on the late date of 9 September 2011. Whilst the species is not difficult to recognize, its rarity in Scotland warrants presentation of photographc evidence (Plate 1). The specimen has been deposited at the National Museums of Scotland, Edinburgh.

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First Monmouthshire record of *Philedonides lunana* (Thunberg) (Lep.: Tortricidae)

On 19 April 2013, Butterfly Conservation Wales carried out a daytime habitat survey for Silurian Moth *Eriopygodes imbecilla* (Fabr.) at Sugar Loaf Mountain, Abergavenny (Monmouthshire, VC 35), with a view to identifying Bilberry *Vaccinium myrtillus* patches to search for larvae. At around 1600 hours BST in dry, cool weather with occasional sunshine, a tortricid moth was disturbed from tall Bilberry on the southern flank of the mountain (O. S. grid reference SO 271184) at 465m above sea level. The moth was duly potted and as it was an unfamiliar species, taken home for further inspection.

On consulting relevant literature (Razowski, J., 2002. *Tortricidae of Europe, Volume 1: Tortricinae and Chlidanotinae*; Bradley, J.D., Tremewan, W. G. and Smith, A., 1973. *British Tortricoid Moths, Cochylidae and Tortricidae: Tortricinae*) and various websites, the moth was identified as a female specimen of *Philedonides lunana*. A photograph was taken (Plate 1) and sent to Sam Bosanquet (Microlepidoptera Recorder for VC 35) who confirmed this as the first Monmouthshire record.

Philedonides lunana occurs primarily in northern Britain, the larvae feeding on various herbaceous plants as well as Bilberry and Heather *Calluna vulgaris* (Bradley, Tremewan and Smith, *op. cit.*). The Monmouthshire record appears to be the most southerly in Britain in recent times, the only record to the south of Sugar Loaf coming from the Merthyr Tydfil area (Glamorgan, VC 41) in 1906, where G. Fleming recorded a single specimen (Hallett, H.M., 1952. *The Lepidoptera of Glamorgan,* unpublished; Hallett, H.M., 1917. The Lepidoptera of Glamorgan. *Reports and Transactions of the Cardiff Naturalists' Society*, L: 45-86). In 2012, *P. lunana* was found new to Breconshire (VC 42) (Norman Lowe, pers. comm.), the county lying immediately to the north of Monmouthshire. A second Breconshire record was made four days after the Sugar Loaf discovery, with six adults noted flying over mixed Heather and Bilberry at Darren Lwyd (SO 2432 and SO 2433) on 23 April 2013, during further Silurian habitat surveys. The species may be increasing in southern Wales, or alternatively the lack of previous records may be due to under-recording. The latter explanation is perhaps more likely, as the general scarcity of adult Lepidoptera in the uplands in early spring has no doubt deterred many recorders.

Plate 1. *Philedonides lunana* (Thunberg) female, Sugar Loaf, Monmouthshire, 19 April 2013. George Tordoff.

Plate 2. *Philedonides lunana* larva on Garden Strawberry (*Fragaria* × *ananassa*), ex Sugar Loaf female. June 2013. George Tordoff.

Eggs were obtained from the Sugar Loaf female and larvae proved easy to rear on Garden Strawberry *Fragaria* × *ananassa* (Plate 2). Pupation took place in mid summer and it is hoped that adults will emerge in 2014. A subsequent search for Silurian larvae at Sugar Loaf proved negative, but finding *P. lunana* provided adequate compensation and highlighted the value of incidental records during single-species surveys.

I am grateful to Sam Bosanquest for confirming the status of *P. lunana* in VC 35, David Slade for information about the Merthyr Tydfil record and Joe Daggett of National Trust for giving permission to carry out surveys at Sugar Loaf.

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Cydia corollana (Hb.) (Lep.: Tortricidae) discovered in Monks Wood, Huntingdonshire

Two Rothamsted Insect Survey light traps were operated in Monks Wood, Huntingdonshire for many years. The first trap, which was known as the "Monks Wood trap", ran from July 1968 until December 1983 and was placed just outside the wood. This trap was removed when the buildings were extended. A second trap was placed inside the wood and was known as the "Ewingswode trap" after the name of the stream that runs through Monks Wood. The Ewingswode trap operated from February 1974 until January 2009, being removed when the research station closed, as there was no one available to empty and service the trap. During the time this trap operated all the macro moths were identified, but the micro moths were destroyed, so in 1991 I asked Adrian Riley to save the micros from several years for me and subsequently asked the same of Phil Gould. Several years' worth of micro moths were collected along with the remaining dross that was in the traps and stored in my study for identification at a later date. The moths were removed from the dross and this was offered to other local recorders, so they could remove any samples which were of interest to them.

I managed to dissect and identify a few of those collected, but lack of time did not allow me to progress as hoped. However, others offered to do some and subsequently identified some of those saved. David Manning identified those from 2005 and Nick Greatorex-Davies the incomplete sets from 2002 and 2003. Kevin Royles then took on the job of identifying those remaining and has so far dissected and identified the micros collected in 1992, 1995 and 2008 and is currently working through the micros of 1993. While doing so he dissected a tortrix, which he identified as *Cydia corollana,* that had been trapped on 17 May 1993. However as this is such a rare species he photographed the moth and genitalia dissection and e-mailed them to me. I agreed with his determination and forwarded the images to John Langmaid for confirmation. John's reply was "That is a super record of a moth which many had thought extinct.

Well done!" As far as we are aware no other examples of this species have been taken in Monks Wood, but as I still have micros for 1991 and 1994 in stock there may be others awaiting discovery.

Cydia corollana was first discovered in Britain at Whittlesea Mere, Huntingdonshire by Mr Bouchard in 1859 and was reported by H. T. Stainton (1859. *A Manual of British Butterflies and Moths*. Vol. 2). This record was also reported in *The Fenland Past and Present*, 1878, edited by Samuel H. Miller & Sydney B. J. Skertchly and subsequently in various other publications. On 5 June 1897 another was reported from Allerdean, Northumberland, however this record has never been confirmed. As far as I can ascertain there were no further records until one was taken in Burnt Oak Wood, Orlestone, Kent at mercury vapour light by P. J. Jewess on 26 May 1982, although it was not 'discovered' until the moth was dissected in January 1987 (Jewess & Tuck, 1988, *Br. J. ent. nat. Hist*., **1**: 9). This moth is now in the Cockayne Collection in the Natural History Museum, London.

The life history of *Cydia corollana* is given in Bradley, Tremewan & Smith (1979. *British Tortricoid Moths. Tortricidae: Olethreutinae*. Ray Society) repeated here. The larvae are reported as feeding on the bark and the woody material in the old or occupied tunnels of galls on Aspen *Populus tremula,* caused by the Cerambycid beetle *Saperda populnea* (L.). Its presence can be detected from the frass exuding from the gall. Areas of Aspen are still found in Monks Wood, so searching for galls and signs of larval feeding along with light trapping in these areas could prove worthwhile.

I would like to thank John Langmaid and Kevin Royles for reading and commenting on this article prior to publication.

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Tuponia brevirostris Reuter (Hem.: Miridae) new to Oxfordshire

On 11 July 2011, I was driving through Woodstock, Oxfordshire with my two sons, Thomas and Ben, on the way to Enstone Quarry for a day's nature study. As we were leaving the urban area, to the north of Old Woodstock, I noticed a large Tamarisk bush (*Tamarix* spp., Tamaricaceae) growing along the edge of one of the resident's gardens, which was overhanging the footpath (grid reference SP441172). These plants grow wild in many parts of the coast of southern England, occasionally occurring inland as an ornamental shrub, and provide a living for two small species of Heteroptera, both added to the British list in recent decades: the chequered brown *Tuponia mixticolor* (A. Costa) (formerly known as *T. carayoni* Wagner), first found in the UK in 1979 in Hampshire and on the Isle of Wight (Nau, 1980, *Ent. Mon. Mag.*, **116**: 83-84); and its green congener *T. brevirostris* Reuter, which reached this country over two decades later, first occurring in Middlesex in 2001 (Barclay and Nau, 2003, *Ent. Mon. Mag.*, **139**: 176-177). Most of the published records of *Tuponia* spp. are close to salt or

brackish water, and an inland sighting of these bugs would therefore be of great interest.

However, given that I would have two children in tow, I decided not to stop the car and examine the bush immediately. This would have been a little too conspicuous, and net curtains may have twitched. So I drove on, and planned to visit again, when I was next in the area. This I did ten days later and, by gently tapping the accessible branches of the bush over the bag of my sweep net, I was rewarded with 15-20 examples of *T. brevirostris*. The Tamarisk-specific Homopteran *Opsius stactogalus* Fieber was also found in good numbers, but *T. mixticolor* was absent. I reported my find to the county recorder, Mr. John Campbell, who confirmed that *T. brevirostris* was new to the Oxfordshire list.

Flushed with success, I promptly visited the only other Oxfordshire Tamarisk bush of which I knew, a small example in University Parks, Oxford (SP514073), which I had been examining regularly each year for *Tuponia* spp. None were found, but several *O. stactogalus* were shaken from the bush. A few weeks later, on 9 August, I noticed another mature Tamarisk growing in a garden in Goring-on-Thames (SU602818) which, as in Woodstock, obligingly overhung the footpath. Again, only *O. stactogalus* was found. These last two failures to find *Tuponia* spp. were puzzling. As the presence of *O. stactogalus* demonstrates, these Tamarisk bushes were both habitable to Hemiptera, and the absence of *Tuponia* spp. could not easily be explained as the application of insecticide to these ornamental shrubs. *T. brevirostris* can make the excuse that it has only been in the country for a decade, and is probably still establishing itself, but *T. mixticolor* has been in the UK for over three decades, which should be plenty of time in which to colonise Oxfordshire, if it was capable of so doing.

Mine is not the only record of *T. brevirostris* occurring alone on Tamarisk. Dr Bernard Nau informs me that there are sites in Hertfordshire and Bedfordshire; and Dr Tristan Bantock reports sites in London and Kent. When I previously wrote on *Tuponia* spp. (Ryan, 2012, *Entomologist's Rec. J. Var.*, **124**: 29), having found both species together at two sites on the south coast of England in 2010, I asked whether the ranges of these two bugs were now concordant. Clearly, they are not. The later arrival, *T. brevirostris*, has managed to establish itself where the earlier arrival, *T. mixticolor*, has not. One possible explanation of these data is that *T. mixticolor* has a marked preference for coastal habitats, whereas *T. brevirostris* is less fussy. However, there are too few available records to draw a reliable conclusion, and I would therefore be grateful to hear from anyone who has recently encountered these species, either alone or together, on the coast or inland.

Some excellent images of the bugs can be found on the British Bugs website (http://www.britishbugs.org.uk) or by searching Flickr (http://www.flickr.com).

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Chalkhill Blue *Polyommatus coridon* (Poda) (Lep.: Lycaenidae) rediscovered in Rutland

On 6 August 2013, whilst recording for the Rutland Butterfly Atlas (see: *http://rutlandbutterflies.wordpress.com/category/rutland-butterfly-atlas/),* I discovered a small colony of Chalkhill Blue at Bloody Oaks Quarry (O. S. grid reference SK 970108). Initially I saw three males and a female; later the same day others counted six males. When I returned on 8 August, I saw four or five males and three females, making at least nine in total and observed mating (Plate 1). Over the following days more observations were made, but when I visited on 18 and 21 August I was unable to find any.

Plate 1. *Polyommatus coridon* (Poola), Bloody Oaks Quarry, Rutland, 2013.

There is little historical information about the Chalkhill Blue in Rutland. It was listed by Douglas (1908. Lepidoptera in *Victoria County History of Rutland, Vol. 1*), and according to Robertson (1994. *Some mid-century Leicestershire Butterflies*. Leicestershire Entomological Society Occasional Publication Series 10) was recorded at Pilton pre-1953. The records this year are therefore the first in Rutland for at least 60 years, and represent the northern extremity of the species' range in Britain.

Its range contracted nationally in the 1950s following the outbreak of myxomatosis, but there is still a thriving colony at Barnack Hills and Holes in Cambridgeshire (TF 076047) and there have been modern records from Northamptonshire in 1976, 1982, 1997, 2003 and 2010 (Goddard & Wyldes 2012. *Butterflies of Northamptonshire*).

Horseshoe Vetch *Hippocrepis comosa*, its food plant, is rare in Rutland, but has been found at a few sites including Bloody Oaks (Messenger 1971. *Flora of Rutland*).

Given the numbers involved, it seems unlikely that all these butterflies had arrived this year. An undetected initial arrival in the previous year, of which this year's individuals were the offspring, is possible. The habitat at Bloody Oaks Quarry is suitable to support a small colony of Chalkhill Blue and it will be interesting to follow its fortunes in future years.

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Marsh Fritillary *Euphydryas aurinia* (Rottemburg) f. *hibernica* (Birchall) oviposition observations in Dublin, Ireland in 2013

A trip to North Bull Island Nature Reserve in Dublin, Ireland on 12 June 2013, allowed me to spend some time studying the Marsh Fritillary *Euphydryas aurinia* colony found there. The butterfly had been seen in good numbers the previous week, with 298 seen on a transect walked on 7 June (Butterfly Ireland website at *www.butterflyireland.com*).

Arriving on site at 09.30 hours, it was not long before I reached an area where Devil's-bit Scabious *Succisa pratensis*, the larval foodplant of the Marsh Fritillary, grows (Plates 1 & 3). Within thirty minutes of arriving, the dark clouds that dominated the sky dissipated and the next few hours were spent in conditions of intermittent sunshine. It was not long before I found my first Marsh Fritillary, eventually seeing well over 100 in the space of a few hours, as well as the occasional Common Blue *Polyommatus icarus* (Rott.) and Small Heath *Coenonympha pamphilus* (L.).

As I was leaving the site at around 12.40, I noticed a female Marsh Fritillary that was flying low among the Devil's-bit Scabious and clearly looking to oviposit. She eventually found a leaf on which to lay her eggs and I was somewhat surprised to find another female already ovipositing on the underside of the same leaf. As I watched the pair for quite some time (Plate 2), a third female flew onto the same leaf before, eventually, settling on another leaf about a foot away where she, too, began to oviposit. The egg batches from the first two females, taken the following morning, are shown in Plate 4. On the face of it, the chances of the same leaf being used among the thousands of leaves available would appear to be extremely small and so I decided to look a little more into this phenomenon.

Matthew Oates (pers. comm.) has seen this behaviour in Marsh Fritillary on several occasions and not just in years when the butterfly is abundant. He has also seen the same in Small Tortoiseshell *Aglais urticae* (L.) and Peacock *Inachis io* (L.). Jeremy Thomas has come across this behaviour in Glanville Fritillary *Melitaea cinxia* (L.) and Small Tortoiseshell (Thomas & Lewington, 2010. *The Butterflies of Britain and Ireland* 2nd edition) and also mentioned (pers. comm.) that a newer egg batch is occasionally laid on top of an older batch. Ken Willmott has also seen this behaviour in Small Tortoiseshell, Peacock and Marsh Fritillary (pers. comm.).

Plate 1. Marsh Fritillary habitat at North Bull Island Nature Reserve in Dublin, Ireland.

Plate 2. *Euphydryas aurinia*. Two females ovipositing on the same leaf of foodplant.

Plate 3. General habitus of the plant selected for oviposition by the two females shown in Plate 2.

Plate 4. The two Marsh Fritillary egg batches on the same leaf.

Plate 5. The single Marsh Fritillary larval web that arose from the two separate egg batches.

Plate 6. Marsh Fritillary larval web at 26 September 2013.

Like most butterflies, female Marsh Fritillary selects a surprisingly small subset of available foodplants for oviposition, choosing those growing in optimum conditions for their young. Therefore, the location of a particular plant in a favoured position, possibly based on a local microclimate, may provide part of the explanation. A deliberate strategy of co-locating egg batches is also plausible since larvae can thermoregulate more efficiently when numbers are higher and more convincingly, their prickly bodies are a greater deterrent to birds, mice and other predators when *en masse*. If this is the case, then the ability of females to locate existing egg batches must also be explained. Ken Willmott recalled one occasion where he accidentally disturbed an ovipositing Small Tortoiseshell which then flew around and behind him before returning immediately, without searching, to the same nettle leaf to continue building the egg batch, possibly relocated using her olfactory senses.

A return trip to North Bull Island on 9 August lent weight to the theory of deliberate co-location in order to provide safety in numbers, since the two egg batches I was following had resulted in a single and relatively-large larval web (Plate 5). What was most surprising, however, was the sheer number of larval webs in total. During a field trip by the Dublin Naturalists Field Club on 17 August, an estimated 200 larval webs were found (Butterfly Ireland website at *www.butterflyireland.com*). Many of these webs, together with the trail of previously-consumed foodplant and associated webbing, resulted in enormous structures which, in some cases, exceeded six feet in length. These structures were clearly the work of larvae whose associated egg batches were laid in close proximity.

A final visit was made on 26 September and following a period when there had been a good amount of rainfall, the webbing mentioned above had all but disappeared. The only hint of the presence of larvae was the brown leaves of partially-eaten Devil's-bit Scabious. However, a dozen larval webs were found which were, as one would expect, thick and compact structures in which the larvae would overwinter; one is shown in Plate 6 and is slightly larger than a tennis ball. It will be interesting to see how such a large population of larvae fares through the winter.

My thanks to Jeremy Thomas, Matthew Oates and Ken Willmott for their own observations and thoughts.

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A history of the Dark Bordered Beauty *Epione vespertaria* (L.) (Lep.: Geometridae) in Northumberland

The Dark Bordered Beauty *Epione vespertaria* is classified as Nationally Rare and is listed in category 3 of the *British Red Data Book*. It is currently a UK Biodiversity Action Plan Priority Species and is also listed on Section 41 of the *Natural Environment and Rural Communities (NERC) Act*, 2006 as a "Species of Principal Importance in England". It remains in the egg stage from late July/August,

overwintering to May. Larval development is throughout May and June, pupating in July and with adults on the wing from mid-July until late August (Waring, Townsend & Lewington, 2009. Field *Guide to the moths of Great Britain and Ireland*. British Wildlife Publishing).

This moth has long held a precarious foothold in Northumberland, since its first discovery in 1863 at Learmouth Bog (Bolam, 1927. *History of the Berwickshire Naturalists' Club - The Lepidoptera of Northumberland and the Eastern Borders*, page 206). It was then discovered 26 years later, in 1890 at Newham Bog (Bolam, *op. cit.*) and of the 19 records currently held on the county database 14 of them are from this site, the last being on 14 July 1999. The records are listed in Table 1.

Survey work has since been conducted at this site from 2006 to 2013, with a maximum four visits per year, in the hope of re-discovering this enigmatic moth. A variety of methods have been employed including daytime observations, 15 watt

Plate 1. *Epione vespertaria* (L.) ♀, Newham Bog, Northumberland, 1988. © Keith Dover

actinic "Heath" traps left overnight and all-night trapping sessions using 125 watt mv Skinner/Robinson traps and a 125 watt mv light over a white sheet. However, all these recent efforts have failed to relocate the species and it is reluctantly concluded that the species is probably now extinct at this site.

After persisting at Newham Bog for 109 years from its initial discovery, the Dark Bordered Beauty failed to make it into the 21st century and the reasons for this can only be speculated at. The small number of individuals recorded at the site (Table 1), indicate that it was always present only as a small population and as such could be vulnerable to extinction. Recent surveys have confirmed that the presumed food

Table 1: Records of Dark Bordered Beauty in Northumberland.

Location	O. S. grid reference	Date	Observer	Number seen
Learmouth Bog	NT 8637	30.vii. 1863	Mr W. Lamb	2
Newham Bog	NU 169295	29.viii.1890	Mr George Bolam	1♀
Newham Bog	NU 169295	15.viii.1898	Mr Ivor Evans	6♂♂
Houxty	NY 856784	vii. 1918	Mr George Bolam	1
Newham Bog	NU 169295	6.vii.1925	Mr George Bolam	1
Fallowlees Burn	NZ 0293	30.vii.1952	Mr J.W.H. Harrison	1
Newham Bog	NU 169295	22.vii.1964	Mr A.G. Long	2
Newham Bog	NU 1729	26.vii.1983	Mr J.D. Parrack	1
Newham Bog	NU 169295	18.vii.1985	Mr P. Corkhill	3
Newham Bog	NU 169295	28.vii.1987	Mr N. Cook	1
Newham Bog	NU 169295	1988	Mr P. Corkhill	1
Newham Bog	NU 169295	20.vii.1988	Mr K. Dover	2
Newham Bog	NU 169295	18.vii.1991	Mr K. Dover	1
Kirkwhelpington RIS Site 532		8.viii.1996	Dr J. Keating	1
Newham Bog	NU 169295	1.viii.1998	Mr N. Cook	3
Newham Bog	NU 169295	5.viii.1998	Mr N. Cook	1
Newham Bog	NU 169295	12.vii.1999	Mr D. McCutcheon	6
Newham Bog	NU 169295	14.vii.1999	Mr P. Davey	1
Kirkheaton	NZ 0177	viii.2006	Mr C. Sayer	1 (dead)

plant at this site, *Salix repens*, is still present but there is some anecdotal evidence that the habitat structure may have changed since the early 1990s with *Phragmites australis* now encroaching into areas that were formerly drier and populated by the food plant (K. Dover, *pers. comm.*). Indeed, over the last 10 years the site is generally wetter (A. Craggs, *pers. comm.*).

It is recommended that large scale clearance of woody vegetation should be avoided in areas where the moth occurs and that scrub clearance should be restricted to small-scale rotational cutting (Butterfly Conservation factsheet at *http://butterfly-conservation.org/files/dark_bordered_beauty-psf.pdf*), but it is known that at least some scrub clearance has been carried out at Newham Bog as part of management to

favour rare plants (personal observations). There is a possibility that at least some eggs might have been inadvertently destroyed by these works. However, a recent approach has avoided the cutting of *Salix repens* during the annual cutting regime and the last two to three years has seen an increase in its extent (A. Craggs, *pers comm*).

Two other intriguing recent records on the database are from the Kirkwhelpington Rothamstead Insect Survey (RIS) light trap and Kirkheaton. These are possibly wanderers from as yet unknown breeding sites and highlight the need for further survey work in these parts of Northumberland and other potential sites where the moth could occur.

My thanks are due to Andrew Craggs (Reserve Manager), Keith Dover (Durham VC66 Moth Mecorder), Jonathan Wallace and Mark Parsons (Butterfly Conservation) for helpful comments.

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A record of *Aethes margarotana* Duponchel (Lep.: Tortricidae) in Buckinghamshire

On 25 June 2013, while conducting a day-time survey of Lepidoptera on scrubby ground adjacent to the southern edge of the Calvert land-fill site in north-western Buckinghamshire (O. S. grid square SP 7022, VC 24), a moth disturbed from vegetation at ground-level was quickly netted for a closer view. It proved to be a very small *tortricid* species (Plate 1) and wasn't in the best of condition, so it was confined to a plastic pot to be looked at back at home.

Later in the day, having photographed the moth and then looked closely at the image, I could see that it was an *Aethes* species and perhaps *Aethes williana* (Brahm) which I have found previously in that same general area. However, I couldn't be absolutely sure so the specimen was retained for closer examination by Peter Hall. A couple of months later Peter dissected the moth and warned me that he thought it was not *Aethes williana* but an altogether more interesting relative. Following consultation with John Langmaid and with Kevin Tuck at the Natural History Museum, who compared its genitalia (Plate 2) with those of the main published resources by Pierce & Metcalfe (1922. *The genitalia of the group Tortricidae of the Lepidoptera of the British Islands*. Privately published) and Razowski (2002. *Tortricidae of Europe. Volume 1: Tortricinae and Chlidanotinae*. Slamka, Bratislava), they came to the conclusion that this was undoubtedly a female *Aethes margarotana*.

Aethes margarotana had previously been recorded from Suffolk, Essex, Kent, Sussex and Dorset as well as from the Channel Islands but was now considered extinct in the UK (John Langmaid pers. com.). Information kindly provided by the various county micro-moth recorders suggested that the moth had not been seen on the UK

Plate 1. *Aethes margarotana* Duponchel, ♀, Calvert, Buckinghamshire, 25.vi.2013, D. Wilton.

Plate 2. *Aethes margarotana* Duponchel, genitalia, Calvert, Buckinghamshire.

mainland since July 1937 (at Felixstowe, Suffolk) or on the Channel Islands since April 1943 (at Le Bourg, Jersey). No response was received from Kent so that county might conceivably harbour a later sighting, while Tony Pritchard, the county recorder for VCs 25 & 26, confirmed that a previously-published 1960s record from Suffolk had proved to be an error for a moth with a confusingly similar name, *Aethes margaritana* (Haworth).

Why *A. margarotana* should make an appearance this far inland when its larval foodplant is considered to be Sea Holly *Eryngium campestre* (Razowski, *op. cit.*) is open to conjecture. A plant expert, Andy McVeigh, visited the general area on 24 August and could find no sign of any *Eryngium* species in the general area where the moth was found but, because there is plenty of inaccessible disturbed ground with calcareous influence on the landfill site itself, he could see that there was a possibility that the plant or one of its close relatives might be present in the vicinity, perhaps as a garden escape. The Bucks & Milton Keynes Environmental Records Centre holds a grand total of four records for *Eryngium* species: *E. campestre* (Milton Keynes in 2003), *E. planum*

(Akeley in 1995 & World's End in 2001) and *E. amethystinum* (Soulbury in 2001). Those from Milton Keynes and World's End, at least, were adjacent to large Garden Centres.

My grateful thanks go to Peter Hall, John Langmaid, Andy McVeigh, Kevin Tuck and the Bucks & Milton Keynes Environmental Records Centre, as well as to the various county recorders for their help with information.

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Magpie Moth *Abraxas grossulariata* (L.) (Lep.: Geometridae) on *Calluna vulgaris* in Banffshire

In 2003, Magpie Moth *Abraxas grossulariata* was recorded at my home address in Banffshire, with four males at light in early July. These were the first sightings for the vice-county since 1990, as the species had become very scarce in north-east Scotland as a whole. Further sightings followed in subsequent years, but only following prolonged spells of north-westerly gales. It was assumed the moths were wind-blown strays from the vast populations on heather moorland in north-west Scotland and in Orkney (*Ent. Rec.* **116**: 119-121).

Firm evidence to support this theory came on 12.vii.2007, when a huge swarm of Magpie Moths about one mile wide and extending two miles out to sea was observed arriving from the north-west across the Moray Firth at Garmouth in Moray. An estimated 500 moths made landfall during a timed two-minute count and arrival continued at a similar rate during the entire 11.00-13.00 hours observation period. By the following day the swarm had moved through; just one individual was seen, drowned in a puddle (Grierson, J., 2008. A Migration of Magpie Moth *Abraxas grossulariata* over the Moray Firth. *Atropos* **35**: 65-66).

The question now was whether the continual influx of these strays would lead to colonisation. Thus far every one of my Banffshire sightings had been a male, but presumably females might sometimes stray too. Heather *Calluna vulgaris* is the usual foodplant in north-west Scotland, but there were no records of it ever being used in Banffshire or in well-worked Aberdeenshire, where larvae had only been recorded on various *Ribes* species, especially Flowering Currant *R. sanguineum*. So if larvae suddenly appeared on moorland, this would be strong circumstantial evidence for colonisation by the strays.

On 27.vii.2012, the first such evidence arrived when 60 adult Magpie Moths were seen by day on the east side of Knock Hill, near Cornhill in Banffshire (Kenneth Evans per Rosemary Smith). This local landmark is an isolated, domed hill that rises steeply to 430m above sea level, set amidst lower farmland about 12km from the coast of the Moray Firth. On 3 .viii.2012 I visited the site myself and counted 83 Magpie Moths

in one hour's observation. Most were flying gently in the afternoon sunshine over the Heather, half a dozen often in view at once, including ovipositing females. Knock Hill is only 3km from my home address and I had been visiting it since 1990 without ever seeing a Magpie Moth. Clearly this was a very recently established breeding population.

To obtain further evidence that Heather was indeed the foodplant there, I visited the site to look for larvae on 19.vi.2013. In 90 minutes searching I found 35 final instar larvae, every one of them on Heather, plus a pupa. This is a far lower density than seen in outbreaks in north-west Scotland, where larvae are so numerous (up to 40 per square metre) as to cause large areas of Heather to turn brown because of feeding damage (Horsfield & MacDonald, 2004. *Ent. Rec.* **116**: 81-83). Those authors also noted that in Sutherland most larvae were found on Heather over 30cm tall growing at below 300 metres above sea level, and that only *Calluna vulgaris* is eaten even when Bell Heather *Erica cinerea* is growing amongst it. Exactly the same applied at Knock Hill, where the great majority of larvae were found on knee-height Heather at an altitude of 250-300m, with none at all on the much shorter windswept growth above the 350m contour or on any other foodplant.

The next visit was on 31.vii.2013, to make a timed count of adults. In 30 minutes (14.37-15.07 hours) 93 Magpie Moths were seen flying gently in the afternoon sunshine, mostly in the zone where larval density had been highest. However, subsequent observations showed that moths extended at a lower density right up to the summit, where several were resting in the shelter of peat hags out of the wind, in company with Grey Mountain Carpet *Entephria caesiata* – a combination I had never seen before. In all, about 160 Magpie Moths were recorded on this visit. Many were below the average size in populations associated with other foodplants. About 30% had a forewing length between 16-18mm, giving a maximum wingspan of 33-38mm, at or below the bottom limit shown in the field guides. Otherwise the moths were very constant in colour and markings.

During July and August 2013, Magpie Moths presumably straying from Knock Hill were trapped on many nights in my garden at Ordiquhill, about 3km to the east. Numbers varied according to the direction of the wind, with a maximum of 22 on 15.vii when the breeze was a gentle westerly but few or none when the wind came from other directions. Females were also seen laying by day or at dusk on my currant and gooseberry bushes, showing that the Heather 'race' can use other foodplants too. It remains to be seen whether the Knock Hill colony proves a temporary settlement or the precursor to a more extensive colonisation of moorland in north-east Scotland.

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The Plume Moth *Oxyptilus pilosellae* (Zeller) (Lep.: Pterophoridae) resurfaces in Buckinghamshire

Martin Albertini (the County Moth Recorder for Buckinghamshire, VC 24), Peter Hall and I ran five mv lights on National Trust land near Bradenham, Buckinghamshire on 24 July 2013. This is an area of chalk downland in the Chiltern Hills and we were hoping in particular to find Royal Mantle *Catarhoe cuculata* (Hufn.) at one of its few known sites in the county. This we succeeded in doing, but perhaps the most interesting discovery of the night did not actually come to our attention until several months later.

My two traps were run in O.S. grid square SU 8297, on a track with mature deciduous woodland to one side and some experimental chalk grassland reversion plots on the other. Amongst several micro species potted up that night was a single example of a very small plume moth which I did not recognise (Plate 1). It was taken home and the following morning, after a record photograph had been taken, I set about trying to identify it. I came to the conclusion that it was possibly *Oxyptilus parvidactylus* (Haworth) or perhaps *Capperia britanniodactyla* (Gregson). While both are known from the Buckinghamshire Chilterns, there is only one previous county record for each of them so I resolved to keep the specimen and have it dissected.

Plate 1. *Oxyptilus pilosellae* (Zeller), male, Bradenham, Buckinghamshire, 24 July 2013.
Photograph © Dave Wilton

Plate 2. *Oxyptilus pilosellae* (Zeller), male, Bradenham, Buckinghamshire, 24 July 2013. Genitalia. Preparation and photograph Peter Hall.

During November Peter Hall checked the moth's genitalia (Plate 2) and was surprised to find that it was actually a male *Oxyptilus pilosellae* – neither of my two suggestions! Hart (2011. *British Plume Moths, a Guide to their Identification and Biology*. BENHS) states that the species "has not been seen since the 1960s and may now be extinct". Colin Hart was contacted and he confirmed the identity from Peter's image of the dissection. The site near Bradenham will be re-visited during 2014 to see if the moth can be found once again.

As it happens, the last known record of the species also came from Buckinghamshire. An example was found in the collection of the late W. A. C. "Sam" Carter and the label indicated that it had been caught in the vicinity of Beaconsfield on 14 August 1964. During 1999 that specimen was dissected by David Manning and confirmed to be *O. pilosellae*. There appear to be no historic records from Berkshire (Martin Harvey, VC 22 County Moth Recorder, pers. comm.), but Plant (2008. *The Moths of Hertfordshire*. HNHS) mentions records from 1905 on the Chiltern Chalk near Tring Station, just inside Hertfordshire (VC 20) and less than 20 km distant from the Bradenham site. It is not beyond the realms of possibility that *O. pilosellae* remains undiscovered at other sites in the northern part of the Chiltern Hills.

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Water Carpet *Lampropteryx suffumata* (D. & S) (Lep.: Geometridae) in November

On the evening of 16 November 2013, I ran my 125 watt mercury vapour trap as part of the Garden Moth Scheme winter session. Among the catch of fifteen moths was a Water Carpet sitting on the outside of the trap. I am quite used to seeing several examples of this species in my trap in the spring, but have never seen one in November. Is this a precedent and are we about to witness similar anomalies in our changing climate?

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UNUSUAL RECORDS OF *HETERARTHRUS CUNEIFRONS* (ALTENHOFER & ZOMBORI, 1987) (HYM.: TENTHREDINIDAE) IN 2013

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Abstract

Heterarthrus cuneifrons (Altenhofer & Zombori), Hymenoptera: Symphyta, is regarded as a scarce and localised species in Europe. However, in 2013 it became widespread and common in parts of the south west Midlands of England. A large number of records from Gloucestershire affords an insight on the autecology of the species. The 2013 outbreak parallels recent events in northern Italy.

Keywords: *Heterarthrus cuneifrons*, Hymenoptera, Tenthredinidae, outbreak, dispersion, Gloucestershire.

Introduction

At the end of a session recording day-flying moths and leaf mines at Painswick Common, East Gloucestershire (O.S. grid reference SO 8712, VC 33) on 14 July 2013, I came across a small Sycamore *Acer pseudoplatanus* tree with a number of unusual, centrally located and large (*c.* 2 cm long axis) vacated leaf mines, which I suspected to be those of *Heterarthrus cuneifrons*. I took a series of photographs of the mines and some of these were later sent to Rob Edmunds, the organiser of the British Leafminers web site (*www.leafmines.co.uk*) who in turn sent copies to Andrew Liston. AL confirmed the identification as *H. cuneifrons* and Painswick thus became only the second British site for the species.

Heterarthrus cuneifrons is one of two Sycamore feeding tenthredinids recorded in Britain, the other being *Heterarthrus aceris* (Kaltenbach, 1856). The two species are very closely related with only subtle differences apparent in the adults. However, the mines of the two are quite distinctive. With *cuneifrons* "the eggs are laid in the middle of the leaf , close to the apex of the leaf petiole, in the vicinity whence the main veins ramify" (Altenhofer and Zombori, 1987, p.195). In contrast, with *aceris* "the egg is laid in one of the apices of the leaf and the emerging larva mines towards the middle of the leaf" (*op. cit.*, p.189). Examples of the two mines are shown in Plates 1 and 2.

Discussion

Heterarthrus cuneifrons was, until now, known only in Britain from a record of vacated leaf mines at Dover in 2005, but *H. aceris* has a much wider national distribution with records extending from Drumburgh on the Solway Estuary (VC 70) to Porlock by the Bristol Channel (VC 5) (Liston and Blank, 2006; National Biodiversity Network website at *http://data.nbn.org.uk/gridMap/gridMap.jspallDs=1&srchSpKey=NHMSYS0020481242* accessed 11 September 2013).

Plate 1. Vacated leaf mine of *Heterarthrus cuneifrons* in Sycamore; Cud Hill, SO 8512, VC 33; 17 July 2013. The mine starts near the centre of the leaf and the larva has moved towards the leaf edge. Note the round cut-out where the larva has left the mine.

Plate 2. Leaf mine of *Heterarthrus aceris* in Sycamore; Huddinknoll Hill, SO 8410, VC 33; 17 July 2013. The mine occupies an apex of the leaf.

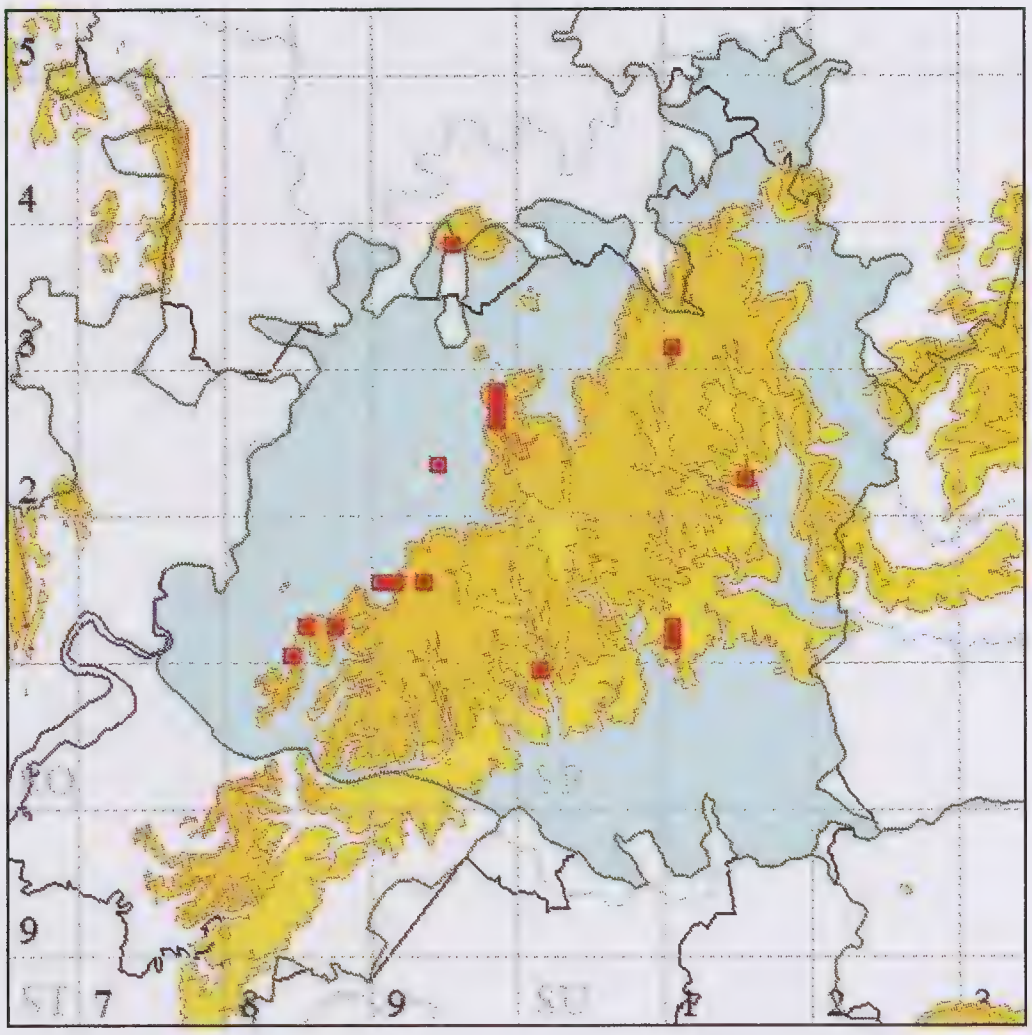

Plate 3. The distribution of *Heterarthrus cuneifrons* in VC 33 in 2013. The red symbols indicate monads in which mines were recorded. The vice county is shaded blue. Yellow and brown shading indicates the higher land in three categories, 150 – 200m, >200 – 300m and >300m.

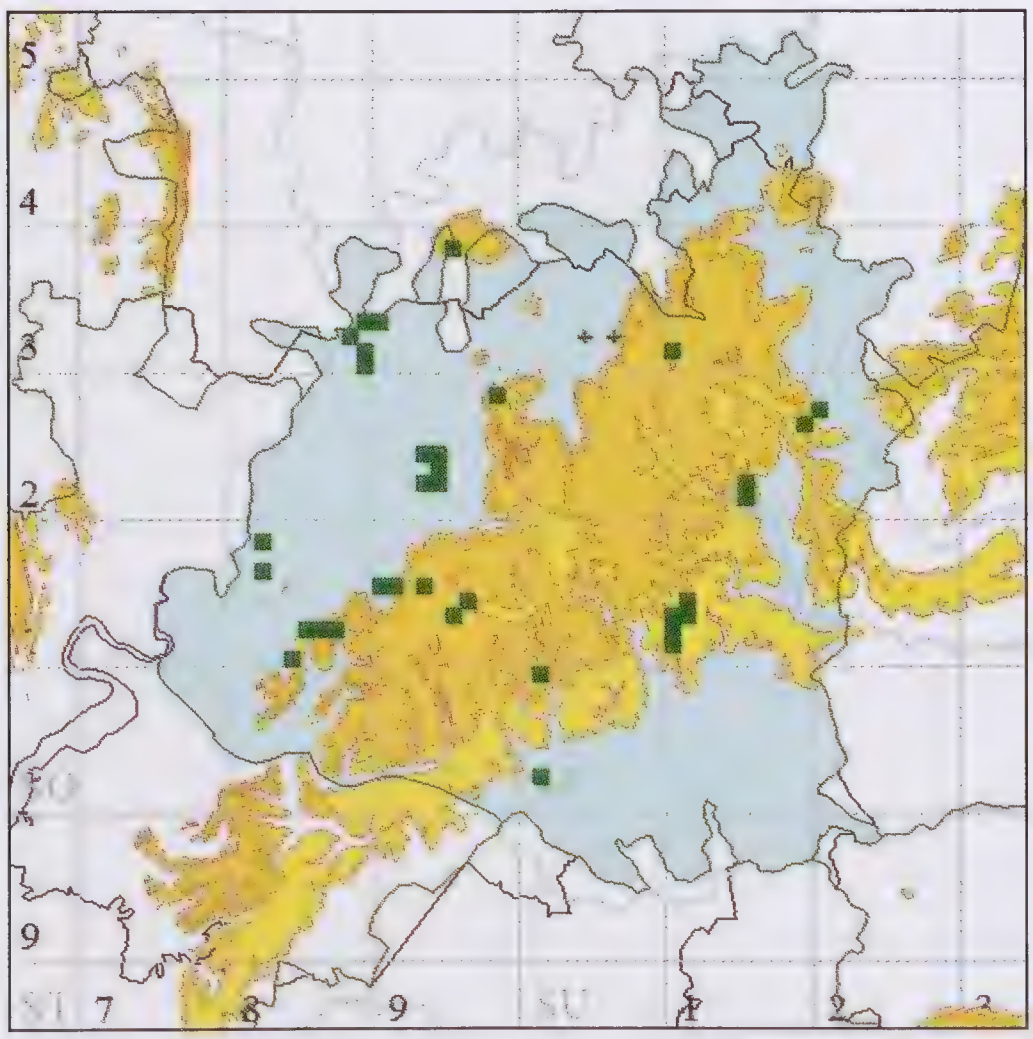

Plate 4. The distribution of *Heterarthrus aceris* in VC 33. The green squares indicate monads in which mines were recorded in 2013 with the green crosses representing pre-2013 records. The cluster of squares in SO 83 is at Tewkesbury and the cluster in SO 92 is at Cheltenham. Other map features as in Fig 3.

The Painswick record outlined above proved to be only the first of an intriguing set of observations of *cuneifrons* in 2013, as further general recording in VC 33 and elsewhere in late July and August suggested that something unusual happened to what is thought to be a scarce and highly localised sawfly in Britain and indeed in Europe as a whole. The locations investigated were mainly in the Cotswolds, especially on the dip slope where there are many map monads with currently few moth and leaf mine records; the locations included a mix of areas that I had not previously examined as well as some visited in the past at different times of the year.

The resulting 2013 records of *cuneifrons* and *H. aceris* vacated mines are shown in Plates 3 and 4, together with two pre-2013 sites for *aceris*. In the context of the single extant British record, the map shows a surprisingly large number of locations for *cuneifrons* across a broad geographical area (16 monads and eight hectads). Reflecting its wider national distribution, *Heterarthrus aceris* was found in East Gloucestershire in 35 monads (10 hectads). In addition to the locations shown in Plate 3, *cuneifrons* mines were also found on Sycamores on the east facing slope of Worcestershire Beacon, near Malvern (SO 7745 and SO 7744, VC 37); Dudbridge, near Stroud (SO 8304, VC 34); Clifton, near Bristol (ST 5673, VC 34); and Leigh Woods, near Bristol (ST 5573, VC 6).

Other studies of *H. cuneifrons* suggest that, compared to *aceris*, it is a more discriminating species. Comparative distribution maps on a European scale show that *aceris* is a more widespread species than *cuneifrons* (Fauna Europaea, 2013. *www.faunaeur.org/Maps/display_map.php?map_name=euro&map_language=en&taxon1=355580&taxon2 =355582* accessed 21 September 2013) and Liston and Blank (*op. cit.*) indicate that for the latter species "Distribution seems centred in the colline to low montane zones of the Alps, Carpathians and their foothills."

On a more localised scale, Altenhofer and Zombori (1987) indicate that in Austria "The larva feeds exclusively in the leaf of *Acer pseudoplatanus* found in shady woods and scrub forests mixed with *Carpinus*, *Fagus* and *Ulmus*" (p. 195), while "The [*aceris*] larva feeds only in the leaves of *Acer pseudoplatanus* found in open landscape, along roads and in hedges" (p. 189). Liston and Blank (*op. cit.*) in reference to the Dover record note that "Whereas leaf-mines of *aceris* were abundant on Sycamores in the woodland and parks below the castle, only three mines of *cuneifrons* could be located. The latter were in well-shaded positions on the trees, as found to be typical of *cuneifrons* by Altenhofer & Zombori, whereas those of *aceris* showed the usual tendency to a position on the sunnier leaves." The East Gloucestershire records offer no evidence to support these observations as *H. aceris* mines were found in Sycamore seedlings in deep shade cast by the overhead canopy of much taller trees and *cuneifrons* mines were found on roadside trees exposed to bright sunlight. In some cases both types of mine were found on the same tree, sometimes on adjacent leaves, suggesting that the micro-level characteristics of an individual tree could influence the choice of egg laying site, rather than macro-level ecological factors (Plates 5 and 6). An alternative and perhaps overly radical suggestion is that just one female laid the eggs and was not tied to a specific location on the leaf.

Plate 5. Examples of close proximity of the two different types of mine. Malvern, SO 7745, VC 37; 26 August 2013.

Plate 6. Examples of close proximity of the two different types of mine. Little Witcombe, SO 9015, VC 33; 22 August 2013.

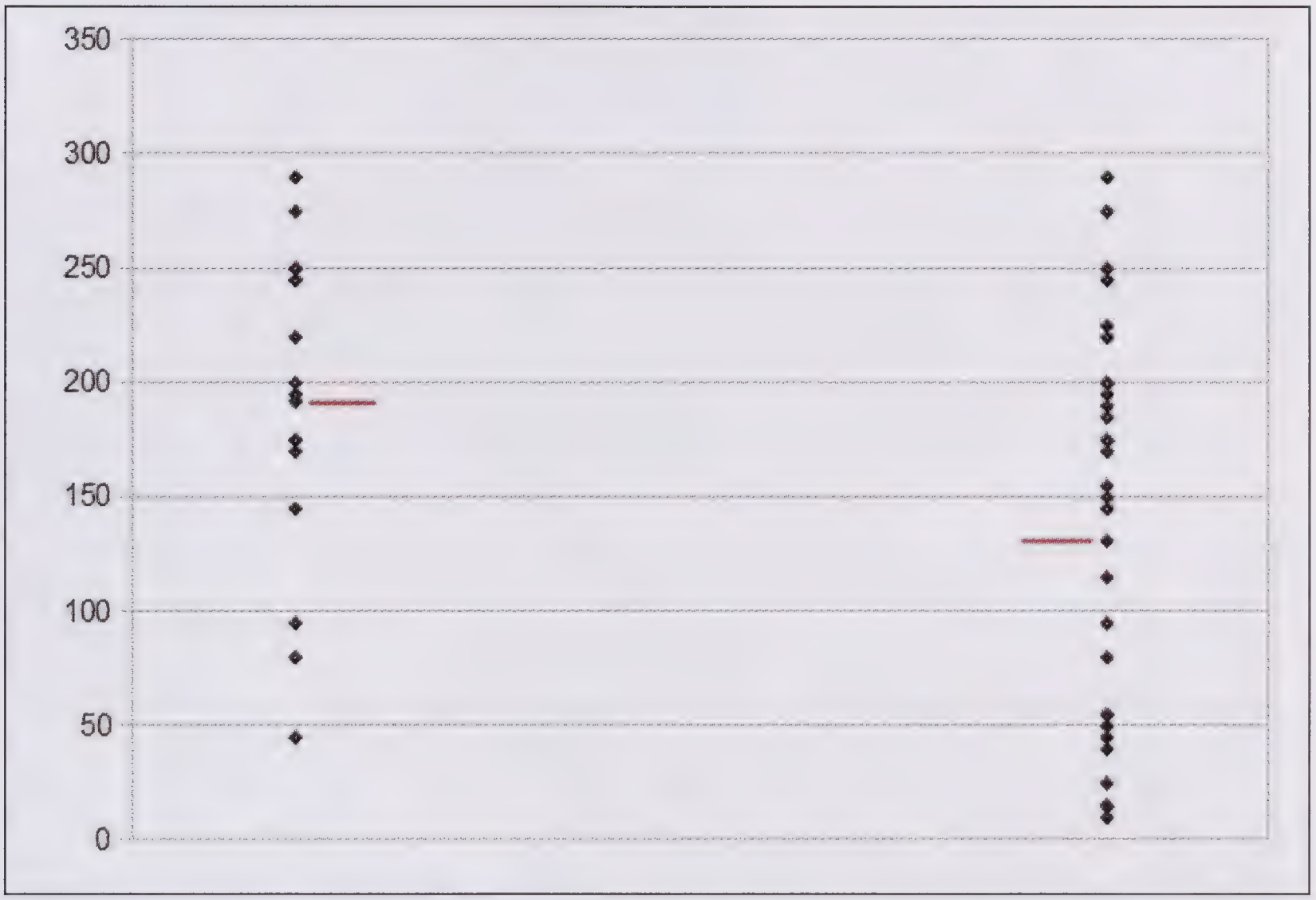

Figure 1. Scatter graphs of the altitudes of the sites where mines were recorded. *H. cuneifrons* on the left and *aceris* on the right. Red horizontal lines indicate the respective mean altitudes (*cuneifrons* = 192m and *aceris* = 131m). Y axis units are metres.

Plate 4 does suggest that in VC 33, *aceris* mines were found over a greater range of altitudes compared to those of *cuneifrons*, which tended to be associated with locations in the Cotswolds with only one instance of a Severn Vale record, i.e. a single mine found on the outskirts of Cheltenham. Figure 1 shows scatter graphs of the altitudes of the records for both species. Heights were noted to the nearest five metres from Ordnance Survey 1:25000 series maps. The mean heights for both sets of data are indicated on the graphs. Statistical analysis using the t-test indicated that the difference between the means is significant with a value of t (2.37) and degrees of freedom of 48.

In the Brembana valley in Lombardy, northern Italy, Boriani, Ghidotti and Molinari (2012) also found differences apparently related to topography with much larger numbers of mines found on trees on north facing slopes compared to those facing south, however, this contrast is a reflection of the marked differences in the micro-climates of the two areas. The north facing slopes are cool and wet, whereas the higher temperatures and drier conditions on the south facing slopes are far less conducive for Sycamores.

Interpreting the records from VC 33 and adjacent locations is fraught with difficulty. The species could be a long-standing but overlooked resident. However, the leaf mines are large and conspicuous blotches on the foliage of a common and widespread tree species; in such circumstances the lack of records is surprising. The relevant

distribution maps on the British Leafminers web site (*www.leafmines.co.uk*) of *Stigmella speciosa*, *Phyllonorycter geniculella* and *Caloptilia rufipennella* all show widespread patterns of distribution across the relevant region, indicating that Sycamore has been a target for intensive investigation. Alternatively, *cuneifrons* could have arrived in the region at the end of a series of short distance movements from another locale; again, however, there is an absence of old records from adjacent areas. It is then perhaps the case that *cuneifrons* is a species with a propensity to make long-distance dispersive movements. For a species to go from just one British record to a regional scale distribution pattern in an entirely new area might seem to be unusual. However, *cuneifrons* has shown a tendency for sudden surges in population size in new locations with examples from the Adige valley in the South Tyrol region of northern Italy in 1999 (Pschorn-Walcher and Altenhofer, 2000), as well as the outbreak in Brembana valley readily apparent in 2009.

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True Lover's Knot *Lycophotia porphyrea* (D. & S.) (Lep.: Noctuidae) larvae found feeding on Bilberry *Vaccinium myrtillus*

On 20 April 2013, I assisted Dave Grundy, Adam Reid and Hugh Lansdown on a torchlight search for larvae of Silurian Moth *Eriopygodes imbecilla* (Fabr.) on the Hatterrall Ridge in the Black Mountains area of the Brecon Beacons National Park. The ridge straddles Monmouthshire (VC 35) and Herefordshire (VC 36).

The weather was dry, winds light and the sky almost clear of cloud, but it was cold with the temperature falling from 5°C at dusk to 3°C by 01.30 hours BST. Only two Silurian larvae were located, despite searching some areas where good numbers had been found in 2012. This was likely a reflection of the very late spring in 2013 with Bilberry buds, the preferred food of Silurian larvae in the spring, showing little sign of unfurling. The only other larvae recorded were a single Fox Moth *Macrothylacia rubi* (L.) and three noctuid larvae which were feeding on Bilberry buds at O .S. grid reference SO 276312 (Herefordshire, VC 36); these were photographed by DG and HL.

Plate 1. True Lover's Knot *Lycophotia porphyrea* (D. & S.) larva feeding on Bilberry bud, Hatterrall Ridge, 20 April 2013. © Dave Grundy.

The following day, DG and HL came independently to the conclusion that the larvae were True Lover's Knot *Lycophotia porphyrea*. This is surprising as there appears to be no mention in the literature of this species feeding on Bilberry. Porter (1997. *The Colour Identification Guide to Caterpillars of the British Isles*) lists Heather *Calluna vulgaris* and Bell Heather *Erica cinerea*, while Waring, Townsend and Lewington (2009. *Field Guide to the Moths of Great Britain and Ireland*, 2nd edition.) give these plants as well as Cross-leaved Heath *Erica tetralix* as a probable but unconfirmed pabulum. Fibiger (1993. *Noctuidae Europaeae* Volume 2: *Noctuinae II*) likewise lists only *Calluna* and *Erica*. The larvae were nearly full grown and were clearly feeding on Bilberry buds (Plate 1).

Five days later, on 25 April 2013, a single True Lover's Knot larva was found resting on a Bilberry stem during a Silurian larval search at Sugar Loaf Mountain, Abergavenny (SO 268187, Monmouthshire, VC 35). The plant was some distance from the nearest Heather and it is assumed that this larva had also been feeding on Bilberry buds.

This is the first time we have witnessed True Lover's Knot larvae on Bilberry despite regular searches for Silurian larvae in recent years. Heather is abundant on the Hatterrall Ridge, but was in particularly poor condition in the spring of 2013, with nearly all plants having browned off following several weeks of cold easterly winds. Perhaps the Heather had become too unpalatable for the larvae and they had switched, after hibernation, onto Bilberry buds as a more nutritious food source.

I am grateful to Tony Jacques (Shropshire macro-moth recorder) who was contacted by DG to confirm the identity of the larvae from photographs and to Mark Parsons for checking European literature.

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Further records of *Agonopterix atomella* (D. & S.) (Lep.: Depressariidae)

Parsons & Davis (2013. Notes on the apparent status of *Agonopterix atomella* (D. & S.) (Lep.: Depressariidae). *Entomologist's Record & Journal of Variation* **125**: 111-113) commented on the surprising apparent current status of *Agonopterix atomella* (D. & S.), indicating that this UK Biodiversity Action Plan species (which is also listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006 as a *Species of Principal Importance in England*), was only known from five sites in just three vice-counties from year 2000 onwards. An appeal was also made for further survey effort, as it was considered likely that there would be sites awaiting discovery/re-discovery.

Fortunately a few individuals took up this challenge and it is pleasing to report some additional discoveries. Formerly this species had been recorded north to Northumberland, so it is particularly good to report the discovery of a new vice-county for the species, in South Northumberland (VC 67), where Tom Tams found two adults at Arcot Pond on 20 August 2013, after previously searching for larvae there without success. The species was also re-discovered at Otmoor, Oxfordshire (VC 23), in 2013 with a single larva bred through by Martin Corley, last being seen in the county in the late 1980s. Finally, the species was refound as larvae on the Isle of Wight (VC 10) in 2013 by Stella Beavan and Bob Heckford, having last been recorded in the vice-county in the late 1960s.

In addition larvae were found at three sites in Dorset, though these were all sites with recent records. However one, a Butterfly Conservation reserve, had only previously had a record of a single adult. A fourth site in Dorset with a 1990s record was searched without success. A site in East Sussex, where the last record was from 1992, was also searched; although several larvae were found that were probably *A. atomella*, those that were retained were parasitised and so confirmation of the moths continued presence at this site is still required.

The moth is now known from eight sites covering six vice-counties from 2000 onwards, being found from the Isle of Wight to South Northumberland. This

distribution would indicate further colonies await discovery and again we would encourage further survey effort in 2014.

We would like to take this opportunity to thank Stella Beavan, Martin Corley, Bob Heckford and Tom Tams for taking the time to look for this species and reporting their findings. We would also like to thank Natural England for their continued support of Butterfly Conservation's *Action for Threatened Moths* Project.

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OUR POLICY ON THE NEW CHECKLIST OF BRITISH LEPIDOPTERA

This was published in late December 2013; the Editor's copy was received in mid January and will be reviewed in the next issue of this journal. Several potential authors have asked for clarification concerning which names to use in contributions. In response to this, I can state that our policy is as follows:

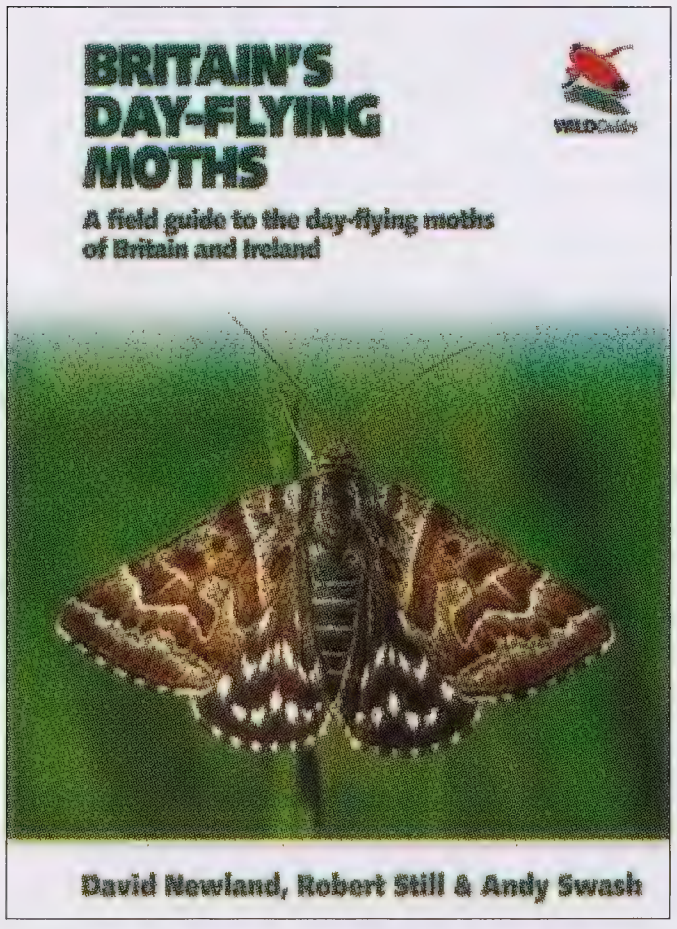
Names of insects must continue to be accompanied, at first mention, by their author, correctly abbreviated or in full (e.g., *Noctua pronuba* L., not *Noctua pronuba*). No matter what new names may be raised, the name "*pronuba*" as applied by Linnaeus will *always* refer to the Large Yellow Underwing.

This Editor was raised on the names in South's *British Moths* and it took some years before the Bradley and Fletcher names, introduced in 1979, could be remembered. I observe that the transition from South to Bradley & Fletcher in the pages of this journal also took a similarly lengthy period. I do not, therefore, think it a good idea to suddenly insist on the new names being used in these pages – a gradual approach is called for. Contributors may use either nomenclature for the present volume provided that the author is included at first mention; in cases of possible confusion the alternative name may be added in parentheses. Where I feel, as Editor, that a change to the name used is essential I will advise the author. However, do please use the new higher nomenclature (family names) and note that I will edit old names to conform. With the 2015 volume it is likely that we will convert fully to the new checklist.

This leaves just one issue. The dates of species names have not been a requirement (*Noctua pronuba* L. and not *Noctua pronuba* L., 1758), because we have had a policy of following the checklist by Bradley, published in 2000. In general, this policy continues, though there may be occasions where the addition of a date is felt desirable to facilitate understanding.

BOOK REVIEWS

Britain's day-flying moths. A field guide to the day-flying moths of Britain and Ireland by **David Newland, Robert Still & Andy Swash**. 224pp, softback with transparent plastic dust-jacket, ISBN 978-0-691-15832-7, Princeton University Press, 2013. £17.95 plus postage and packing.



My library shelves, not to mention my bank balance, are groaning these days under the weight of all the moth books that seem to be appearing. Do we really need another moth book? My view is "yes" provided that two primary conditions are met. First, the subject matter ought to be presented from a new or otherwise interesting angle; second, because there are already so many quality works already available the scientific standard and aesthetic quality both need to be exceptionally high.

With regard to the first, I suggest that the present work does meet this condition since it targets those people, presumably non-collectors, who prefer to do their moth watching by daylight. However, the interpretation of the term "day-flying" has evidently been treated as *sensu lato* and a goodly number of the 155 included species are actually nocturnal beasts that may, with varying degrees of likelihood, be disturbed from vegetation by day. Some hawk-moths are included – now there's a surprise; perhaps the space used by some of these may have been better used in presenting more of the grass moths (Crambidae) or even showing us *Pyrausta ostrinalis* alongside the excellent images of *P. aurata* and *P. purpuralis*. It is pleasing to see, though, that micros have not been overlooked, even if proportionately under-represented in the photographs.

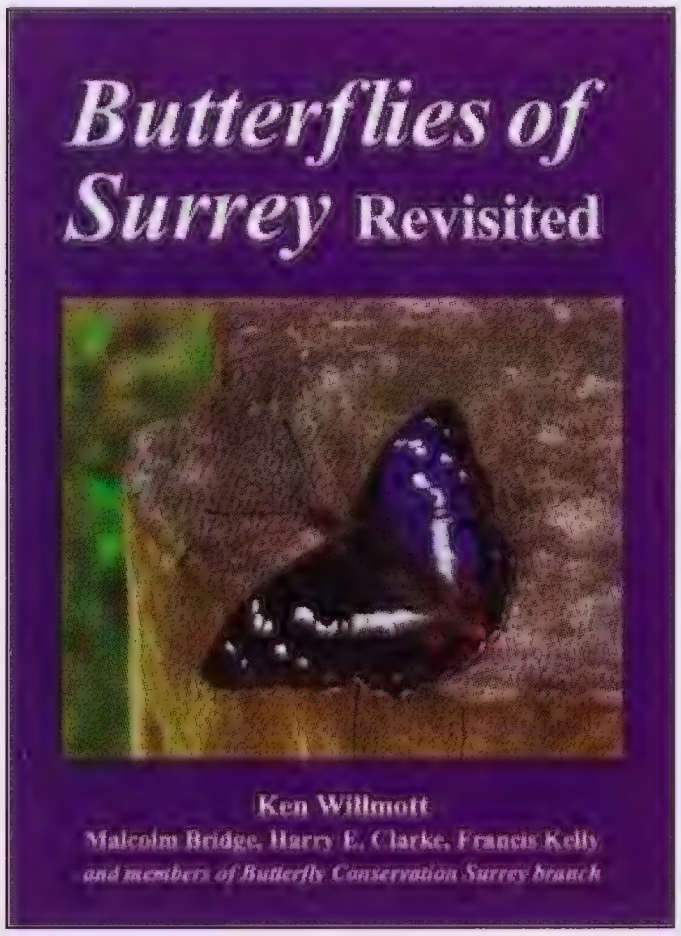
In terms of scientific content and accuracy it is hard to find particular fault, although there is a rather suspicious character purporting to be a Latticed Heath *Chiasmia clathrata* on page 109 that would give any self-respecting female Common Heath *Ematurga atomaria* a run for its money! The text that accompanies the illustrations is fairly good at noting the similar species that might be encountered, though I am not sure of the reasons for or wisdom of including the Satyr Pug *Eupithecia satyrata* as the only "brown" pug – especially since it sits opposite a strikingy different looking Marsh Pug *E. pygmaeata*, which is stated to be similar! I suspect that County Moth Recorders may see a sudden surge in *satyrata* reports in 2014. *Photedes captiuncula* is shown opposite two forms of *Mesoligia furuncula* and the only comment made is that the former is smaller and lacks the "cloak" that is usually evident in the latter. Given the clear inference from the two pictures that *furuncula* is variable, I feel I might be forgiven for seeing something resembling a cloak in the *captiuncula* image whilst, as for size, one goes up to 9 mm and the other starts at 10 mm! I cannot help thinking that additional text might have been helpful. The distribution data seem to be up-to-date for the species checked. For example, Jersey Tiger *Euplagia quadripunctaria* L. is shown for London and Hertfordshire to which it has spread and become resident in the last three or four years, although the other new and even more abundant resident in this area, the Toadflax Brocade *Calophasia lunula* is not afforded an entry in the pages in spite of being, in season, easily disturbed from the foodplant at most post-

industrial sites, overgrown cemeteries and even domestic gardens throughout London and along the Thames into Essex. The Six-belted Clearwing *Bembecia ichneumoniformis*, which is abundant on many such sites is included, though the alternative foodplant of *Lotus tenuifolia* upon which it thrives at many East London sites is not listed.

This book does not set out to form a comprehensive guide to all the moth species, but is likely to prove an invaluable field guide for bird-watchers, general naturalists, wildlife photographers and others for whom moths are not the primary interest, as well as for people who simply love moths. It is far and away the best of the books available that I would be likely to recommend to complete beginners and hopefully it will encourage some of its users to look beyond the sunset, join their county moth group and discover the vast wealth of nocturnal species – many of which are just as photogenic!

COLIN W. PLANT

Butterflies of Surrey Revisited by **Ken Willmott, Malcolm Bridge, Harry E. Clarke and Francis Kelly**. 240pp, hardback with dust-jacket, ISBN 978-0-9556188-4-0, Surrey Wildlife Trust, 2013. £16 plus £2.75 UK postage and packing. From the publisher at SWT, School Lane, Pirbright, GU24 0JN.


Butterflies of
Surrey Revisited
Ken Willmott
Malcolm Bridge, Harry E. Clarke, Francis Kelly
and members of Butterfly Conservation Surrey branch

It is a reviewer's job to be both fair and critical in equal proportion and so I am bound to ask why we need this book, given that it is only rather few years since *Butterflies of Surrey* was published under the authorship of Graham Collins, in 1995? Things change, true, but a glossy hardbound book? For those not living in Surrey, in particular, what might the attraction be? Happily, having read the book I am able to answer these questions in positive manner and to recommend the book as being worthy of a place in the library of both butterfly enthusiasts and invertebrate ecologists alike.

The 1995 volume, by Collins, placed on record the situation at that date. This provided a solid baseline of data against which changes could be monitored and cannot be criticized. The present volume, on the other hand, whilst updating the maps as expected also places on record the changes that have taken place and then analyses these. By using three different symbols, the authors portray in the maps various geographical losses, gains and areas of stability for each species, whilst the use of colour allows these to be categorized in terms of the numbers of individuals recorded. Randomly selecting one rare species, for the Adonis Blue *Polyommatus bellargus,* we can see a central area of stability, within which a smaller central area generates high counts. To the west of this, the species is shown in two new areas, but to the east there is clearly a decline over a significant area. The text discusses all this and more, is extremely detailed and also includes habitat

management guidelines. In combination, these features make the book a valuable reference source that can be quoted by those trying to preserve what little is left of our semi-natural habitats.

Picking another species, the Small Heath *Coenonympha pamphilus* also has an interesting entry. Regarded by some as a species in serious decline, a view perhaps not universally shared, we can see a distribution over almost all of the county where there is available habitat, but with a clear area of numerical abundance on the chalk of the North Downs. The map also shows a loss from 71 localities and a gain of 75 others; the population has remained stable in 126 areas, so that overall there is a net gain of 2% across Surrey. This is so much more useful than simple dots on maps! The text deals with these matters and others in a clear, concise and accuate manner, as well as providing habitat notes and pointers to identification of the species. An analysis of flight times (weeks) and abundance is backed by graphs of the data and analysis of trends seems to show that many species are appearing up to two weeks earlier than they were only a few years ago.

Unsurprisngly, there are also some excellent photographs of the adults, which doubtless make the book sell, but I would have liked to see greater inclusion of the early stages. For example, under the heading of Brown Hairstrak *Thecla betulae* we are shown the adult and the eggs, and told how to find both; when it comes to the larva we are told, quite enthusiastically, how to look for it and we read that "*It is exciting to see a fully-grown, bright green larva in its natural resting position*" but as for a picture … there is none! Perhaps it is the only green caterpillar on Blackthorn? There is not even mention of the pupa.

Of course, one could go on for ever making minor criticisms and if the authors accepted all of these we would probably end up with such a large tome that it would become an academic text book rather than a popular guide. This book strikes just about the right balance and in answer to my initial query is indeed justified; it will be both of direct interest to all butterfly enthusiasts and an important reference for ecologists. As is the case for the entire series of Surrey wildlife volumes, it is also something of a model that other counties might wish to consider adopting.

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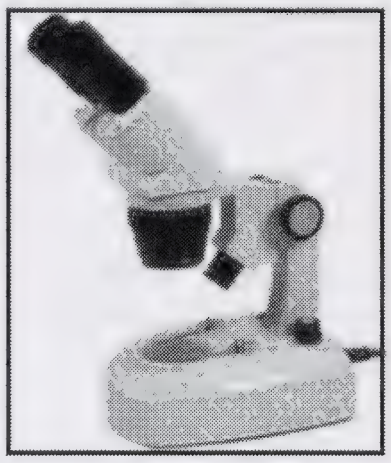

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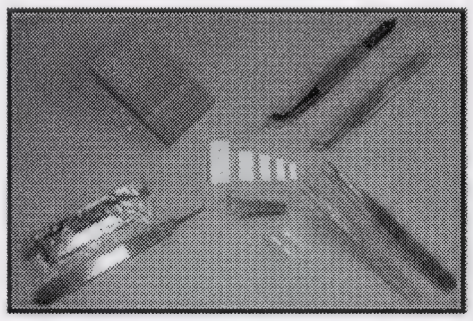

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The Entomologist's record is now printed in full colour, enabling us to accept a wider range of illustrative and interpretative material. This development has been made possible by a generous bequest by the late Andy Callow.

Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

STENOPTILIA ISLANDICUS (STAUDINGER, 1857) (LEP.: PTEROPHORIDAE) AT A NEW SITE IN THE BREADALBANE REGION, PERTHSHIRE, SCOTLAND AND A REVIEW OF BRITISH RECORDS

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Abstract

This paper reviews the history of *Stenoptilia islandicus* (Staudinger, 1857) (Pterophoridae) in the British Isles and records the discovery of a new site in the Ben Lawers area of the Breadalbane region, Perthshire, Scotland, which is only the second known extant locality in the British Isles.
Key words: Lepidoptera, Pterophoridae, *Stenoptilia islandicus*, history in the British Isles, Breadalbane region, Ben Lawers, new locality.

Introduction

In 1953 and 1954 Canon G. A. K. Hervey took three specimens of *Stenoptilia islandicus* (Staudinger, 1857) in the Ben Lawers area of the Breadalbane region, Perthshire, Scotland. They were initially tentatively identified as '*Stenoptilia ?pelidnodactyla*' (Stein, 1837) in 1954 at the Natural History Museum, London (BMNH). In 1986 *S. pelidnodactyla* was added to the British list by Bradley & Fletcher (1986: 34) on the basis of these determinations. Two years later Gibeaux (1988) showed that Hervey's specimens were in fact *S. islandicus*, a species otherwise known only from Iceland, Norway, Sweden, Finland and Russia. Hervey died in 1967 unaware of the correct identification of his material.

We review the history of the species in the British Isles, which is confined to the Ben Lawers area. We also set out an account of discovering it at a new locality near Ben Lawers in 2013, which is apparently only the second known extant site.

In this paper we have used the specific epithet '*islandicus*' and not '*islandica*', even though that is the spelling used by Gibeaux and others, including Hart (2011: 36, 92, 146, 176, 212, 214, 253), in some of the publications we cite. The species was originally described by Staudinger as *Pterophorus islandicus*. Hart (2011: 1-2) explains that the International Code of Zoological Nomenclature requires that the specific name of a species should agree in gender with the current generic name. We, however, follow the practice adopted by many lepidopterists, including those working on Fauna Europaea (de Yong, 2013) and the latest Danish and Austrian Checklists of Lepidoptera (Karsholt & Nielsen, 2013; Huemer, 2013), of using the original spelling of a specific name. This is for the cogent reasons advanced by Sommerer (2002), and is the approach that has been adopted by Agassiz, Beavan and Heckford (2013) in the current British checklist of Lepidoptera.

History of British records and identification

Stenoptilia islandicus was added to the British list by Gibeaux (1988) on the basis of three specimens in the BMNH that he states were taken at 2,500 feet on 8 July 1954. He illustrates an adult and the genitalia of both sexes. The captor's name is not recorded and the locality is given as 'Ben Lauwers', although one of the labels on the genitalia slide preparation is figured which reads 'An Stuc / Lawers / 2500 ft. / 8/7/54'. Gibeaux did not make any of the genitalia preparations; these were all made by Dr J. D. Bradley of the BMNH in 1954 and all the genitalia slides have the name '*Stenoptilia ?pelidnodactyla*' on their labels. Gibeaux explains why the specimens are, in fact, *S. islandicus*. It is regrettable that Gibeaux did not publish this discovery in a British journal, especially as the information was unlikely to appeal to French readers as the species is not known to occur in France.

Ben Lawers is one of the highest mountains in Scotland and one of the richest botanically. An Stuc is just under 2 km north of Ben Lawers.

Examination of the data labels of the three specimens in the BMNH shows that only two were taken on 8 July 1954 at 2,500 feet (each reads 'An Stuc / Lawers / 2500 ft / 8/7/54'); the other was taken on 17 June 1953 at 1,500 feet ('Lawers / 1500 ft. / 17/6/53'). The 1953 specimen has a label giving the genitalia slide preparation number 3146 ♀, and the other two have labels giving genitalia slide preparation numbers 3580 ♂ and 3585 ♂. None of the specimens has a label with the name of the captor, but that from which slide 3580 has been made has a manuscript label reading 'Pres. Vine Hall/BM. 1967.659′ and which is illustrated in Gibeaux's paper. The slide labels provide more information. Each slide has two labels which read as follows:

'♀ / 3146 / ix.1954 J.D.B. / sp. returned to Canon H.(*sic*) A.K.Hervey'

and

'*Stenoptilia* / ?*pelidnodactyla* / Stein. / Ben Lawers Crags / 1500′ 17.vi.53. / Canon GAK Hervey'

'♂ / 3580 / viii 1954 J.B. / Spn. in collection / Canon G.A.K.Hervey'

and

'*Stenoptilia* / ?*pelidnodactyla* / Stein / Ben Lawers, Base / of An Stuc Crags / 2500′ 8/7/54'

'♂ / 3585 / viii.1954 J.B. / Spn. in collection / Canon H.(*sic*)A.K.Hervey'

and

'*Stenoptilia* / ?*pelidnodactyla* / Stein / Ben Lawers, Base / of An Stuc Crags / 2500′ 8.7. 1954 / H.(*sic*)A.K. Hervey'

It is clear from the slide labels that the specimens were collected by Hervey and that the moths were in his collection at the time that the genitalia preparations were made. It also seems that Hervey thought that the moths were sufficiently interesting to take them to the BMNH and that Dr Bradley thought so too because he dissected all three within two months of the captures in 1954.

The reason that one of the moths has a label denoting presentation to the BMNH by Vine Hall is as follows. The Reverend J. H. Vine Hall records (1970) that after the death of Hervey in the summer of 1967, his daughter asked Vine Hall if he would accept his collection, to which he agreed. Mr D. J. Carter of the BMNH subsequently spent two days looking at the collection, and as a result that year Vine Hall presented the BMNH with 160 specimens of Microlepidoptera from Hervey's collection. This is recorded by Carter (1970) in a note to Vine Hall's paper. Only two species are mentioned in that note, neither being a *Stenoptilia* species, but clearly, and fortunately, Hervey's three *Stenoptilia* were among the 160 moths donated by Vine Hall.

As already mentioned, Dr Bradley had made genitalia preparations of Hervey's material in 1954 and had tentatively determined these as *Stenoptilia pelidnodactyla*. As a result, this species was added to the British list by Bradley & Fletcher (1986: 34). The name was prefixed with an asterisk and in the introduction to their publication Bradley & Fletcher comment that 'British status, including those based on unconfirmed records and adventives unlikely to recur, are marked with a [*sic*] asterisk (*).' We are not clear whether the asterisk was intended to denote doubt as to whether *S. pelidnodactyla* was the correct identification; it seems unlikely that Bradley & Fletcher considered it to be adventive and it was not 'unconfirmed' in the sense of doubt about the record.

In his review of Microlepidoptera for 1985, Agassiz (1987: 170) comments that:

> '*S. pelidnodactyla* is another species in the same complex [the *Stenoptilia bipunctidactyla* complex] which has surreptitiously crept into the British list, albeit with an asterisk. This may be worthy of comment even though it has nothing to do with 1985. Specimens taken on Ben Lawers, v.c.88 in 1957 were tentatively assigned to this species by Dr. Bradley. M. Christian Gibeaux has examined the specimens in the BM(NH) and says they are not *pelidnodactyla*, their identity remains a mystery ...'

As can be seen from the data provided earlier in this paper, the specimens were not taken in 1957 but in 1953 and 1954.

In his next review of Microlepidoptera, published after Gibeaux's 1988 paper, Agassiz (1988: 119) states that according to Gibeaux's 'latest paper' (no reference is cited) there are five resident British species in the *Stenoptilia bipunctidactyla* group, being:

> '*S. bipunctidactyla* (Scop.) whose larva feeds on *Knautia; S. picardi* Gibeaux whose larva feeds on *Succisa; S. scabiodactyla* (Gregson) whose larva feeds on *Scabiosa; S. islandica* (Staudinger), the Scottish mountain species and *S. arida* (Zeller) = *gallobritannidactyla* Gibeaux.'

Despite Agassiz's reference to Gibeaux's 'latest paper', we cannot find that he did, in fact, publish one paper showing that there were, supposedly, five resident British species in the *Stenoptilia bipunctidactyla* group, including *S. islandicus*. As already noted, Gibeaux certainly published one paper in 1988, but that dealt only with *S. islandicus*. We have been unable to trace when and where he published a note or notes about the other four species as British and giving foodplants.

Agassiz does not mention that *S. islandicus* is the correct identification of the species given by Bradley & Fletcher (1986: 34) as *S. pelidnodactyla*. This point is made by Agassiz, Heckford & Langmaid (1994: 213), although they too, wrongly, refer to Hervey's specimens being taken in 1957. *S. pelidnodactyla* does not occur in the British Isles.

Curiously, five years later, Agassiz (1992: 9) was more cautious about the identification of Hervey's specimens, stating: 'Canon Hervey took a series of a *Stenoptilia* species on Ben Lawers, Perthshire, in July 1957 which may be referable to *S. islandicus* (Staud.).'

It appears that the next record after Hervey's was of one taken by J. M. Chalmers-Hunt on 18 July 1966, but, of course, not recognised until after 1988. This specimen is in the BMNH and bears the following label: 'Chalmers-Hunt/18.7.1966/Ben Lawers/Perthshire'. It appears that this record was never published and we are grateful to Colin Hart for informing us that Michael Chalmers-Hunt told him that as far as he could remember he took it 'by a stream'. This might be the Burn of Edramucky as it runs near the path that goes to the summit of Ben Lawers (Colin Hart, pers. comm.).

Then on 29 June 1992 Brian Elliott and Bernard Skinner found it on Ben Lawers, according to Agassiz, Heckford & Langmaid (1994: 228), and Colin Hart noted two on Meall nan Tarmachan that year (Hart, 1993; Agassiz, Heckford & Langmaid, 1994: 228). In fact Colin Hart tells us (pers. comm.) that Elliott and Skinner's locality is also Meall nan Tarmachan. This is a mountain that is part of the Breadalbane region to the west of Ben Lawers, from which it is separated by Lochan na Lairige. Hart (1993) comments that in 1954 Vine Hall captured a series of Plume moths thought to be a form of *Stenoptilia bipunctidactyla* (Scopoli, 1763) on the slopes of Ben Lawers that were presented to the BMNH in 1967, but were identified by Gibeaux as *S. islandicus*. In fact, as already stated, the moths were collected by Hervey and subsequently presented to the BMNH by Vine Hall. Hart goes on to record that he spent over a week in Scotland in June and July 1992 searching for the species and eventually found two at about 800 m (2,600 feet) on the slopes of Meall nan Tarmachan at a place suggested by Bernard Skinner. Moths have subsequently been found in this area on several occasions. Larvae have also been discovered there feeding on Mossy Saxifrage *Saxifraga hypnoides* L. from which moths have resulted (unpublished).

Hart (2011: 92) states that Gielis (1996) gives the larval foodplants as Tufted Saxifrage *Saxifraga cespitosa* L. and *Saxifraga adscendens* L. This information is derived from Aarvik *et al.* (1988: 87-88). It should be noted that Gielis (1996: 59, 203) refers to a paper by Aarvik *et al.* in 1986 *Fauna Norvegica* Serie B 33, but the correct year is 1988 and the volume number is 35, as cited in the References below. Aarvik *et al.* (1988: 87-88) record that in 1985 larvae were found feeding at night on both plants and that during the day they hid under the leaves; moths were reared. The biology was unknown until then. Tufted Saxifrage is very rare and local in the British Isles, being confined to one locality in Snowdonia in north Wales and several in northern Scotland; *Saxifraga adscendens* is absent from the British Isles.

Plate 1. *Stenoptilia islandicus* (Staudinger, 1857), east of Lochan na Lairige, Ben Lawers, Perthshire, 18 July 2013. Photograph © S. D. Beavan & R. J. Heckford.

Discovery in 2013

On 17 July 2013 SDB had explored an area to the east of Lochan na Lairige, being part of one of the lower slopes of Ben Lawers, and had observed Small Mountain Ringlet *Erebia epiphron scotica* Cooke, 1943, a species that RJH had never seen. As a result we both went there the following afternoon, when the weather was dry and very warm, and several Small Mountain Ringlets were seen flying. RJH had been to this area in poor weather in early July 1996 and had noted *Saxifraga hypnoides* growing over some large rocks. We re-found this site in the late afternoon and there we saw about half a dozen *Stenoptilia islandicus* at about 650 m (2081 feet). Some were disturbed from the vegetation, some appeared to be flying naturally. Most were rather worn, but we illustrate one (Plate 1); Hart (2011: 212, pl. 12 fig. 2; 214, pl. 13 fig. 2; 253, pl. 36 fig. 4) provides the only other illustrations of the adult that we can trace in the British literature.

Meall nan Tarmachan is on the west side of Lochan na Lairige and just under 1½ km from where we found the moths. Both sites are base rich with large rocks amongst which *Saxifraga hypnoides* grows.

Distribution outside Scotland

Stenoptilia islandicus is otherwise known from Iceland, Norway, Sweden, Finland and Russia, but that statement needs to be explained in view of two publications that give a slightly different distribution. Staudinger described the species from Iceland. In his paper on the zoology of Iceland, Wolff (1971b: 49) states that it is also known from Norway, Sweden and Finland. Gielis (1996: 59) gives Iceland, Scotland, Norway and Sweden but omits Finland. This appears to be an oversight because he includes Finland in the Distribution Catalogue towards the end of his publication (1996: 200). In his monograph on the Palaeartic *Stenoptilia* species, Arenberger (2005: 69) gives 'England: Lawers', Iceland, Greenland, Sweden, Norway, Finland and Russia. Clearly he mistakenly believed that Ben Lawers is in England. His inclusion of Greenland appears to be due to an error. Wolff (1971a: 76-78; 1971b: 48-49) had established that the species in Greenland, hitherto believed to be *S. islandicus*, was in fact *S. mengeli* Fernald, 1898, which is very similar macroscopically but separable on small, constant differences in the genitalia of both sexes. This is a species otherwise known from northern Canada. Arenberger (2005: 82) includes *S. mengeli* in his work even though it does not occur in the Palaeartic region, as the distribution is given as Greenland and Canada (Nearctic region). It seems unlikely that two species separable by only small differences in the genitalia should both occur in Greenland. We consider that Arenberger mistakenly included Greenland in the distribution of *S. islandicus*.

Discussion

Colin Hart tells us that he has been to An Stuc but could not find any *Saxifraga* species there, so it would appear that either the moths collected in 1953 and 1954 had been blown or had flown there from elsewhere, which seems an unlikely coincidence, or the habitat has changed. He has not found the species anywhere else in the Ben Lawers area. Thus our visit on 18 July 2013 resulted in a new site being discovered for the species, which is currently only the second extant locality known in the British Isles. It remains to be seen whether it will be found in any other part of the Breadalbane region. As Hart (2011: 94) rightly comments 'It is inconceivable that this insect is restricted to a single site, but the remoteness of its locality and the need for good weather conditions, in order to find the adult, make it very hard to record from new localities.'

Finally, we wish to pay tribute to Canon George Aiden Kingsford Hervey, the discoverer of this species in Scotland. As well as being an entomologist he was also a hill walker. As a result, he probably visited more mountain localities in Scotland than most lepidopterists. On 11 July 1954 he took the first British specimen of *Plutella haasi* Staudinger, 1883 (Plutellidae) at 2,500 feet somewhere on Beinn Eighe, Wester Ross, Scotland, which was initially misidentified and not correctly determined until 1982. This remained the only known British specimen until 2009 (Heckford, 2011). His capture of *P. haasi* was only a few days after he had taken two *Stenoptilia islandicus*, having collected one the previous year. Thus, although he discovered two species new to the British Isles in just over a year, unfortunately he died before either was recognised.

Acknowledgements

We are indebted to Colin Hart (Betchworth) for providing us with a copy of Gibeaux's paper, much valuable information about earlier records and his experience of searching for *Stenoptilia islandicus*. We also thank Martin Honey (BMNH), Ole Karsholt (Copenhagen) and Marko Mutanen (Oulu) for their help in various ways.

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Dispersive behaviour by male Chalk Hill Blue *Polyommatus coridon* (Poda) (Lep.: Lycaenidae)

Small events can remain etched on the memory long after more important ones have faded. The year was probably 1982. The locality was Moulsecoomb Wild Park on the outskirts of Brighton in Sussex, an area of chalk downland too steep for building but no longer used for farming. Due to the lack of grazing much of the open turf had already been lost to scrub, but some nice patches remained, still supporting a characteristic insect fauna.

It was a hot sunny day in early August. I was standing at the foot of one such slope at O. S. grid reference TQ 331077, idly watching Chalk Hill Blues *Polyommatus coridon*. They were very active in the warm weather. Occasionally some would stray from the slope onto the mown municipal grass at its base, but after travelling a metre or two they invariably turned back and regained the flowery turf. There was nothing to interest them on the mown sward – no foodplant, no females, no worthwhile nectar sources. I had seen similar behaviour many times before, while doing butterfly transect counts at Castle Hill NNR. Unsuitable habitat restricted dispersal because the butterflies were reluctant to cross it, even though there was no physical barrier.

Then, as I watched, one Chalk Hill Blue defied all predictions. It was a fine fresh male. Leaving the downland slope, it set off purposefully across the mown turf. I hurried after it, surprised by this departure from the norm and curious to see what it would do. On it went, flying steadily and straight, travelling east by south-east. The mown strip was about 50 metres wide; next came a tarmac foodpath at the edge of a busy dual carriageway, the A270. The road was baking in the sun and reeking of exhaust fumes – unsuitable habitat in the extreme! Surely the butterfly would turn back here? Instead, it crossed the tarmac footpath, then the dual carriageway, next a slip road, until it reached the first row of houses in North Moulsecoomb, a notorious council estate. Over a Privet hedge it went, into a front garden. I momentarily lost sight of it, but picked it up again, climbing steeply upwards to clear the house. My last view was of it silhouetted against the sky, disappearing over the rooftops, still travelling east by south-east.

If someone had described this event to me I would not have believed it. That simply isn't how Chalk Hill Blue behaves. I have seen hundreds of thousands and they don't fly over rooftops, 10 metres above ground. Yet this one did. Had it somehow recognised that the habitat was deteriorating and set out to find better? Or are some individuals genetically programmed to disperse?

In those days I did not subscribe to entomological journals or attempt to write scientific notes, but the butterfly's behaviour was so remarkable that despite the lapse of time it seems worth documenting.

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BIODIVERSITY, LEPIDOPTERA AND URBAN BIOTOPES IN BERLIN

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Abstract

Some aspects to the Lepidoptera of Berlin are explored, including a preliminary survey of an inner-city locality near the site of the former Wall. It is suggested that Berlin has high levels of invertebrate biodiversity because of its wide range of urban biotopes including distinctive habitats such as "wastelands" and other types of ruderal land. Further factors include the high proportion of "green space" in and around the city and lower levels of light pollution in comparison with other European cities. The wider policy implications for urban ecology and nature conservation in cities are also considered.

Introduction

Berlin is good for moths. On the evening of the 19 June 2013, having finished dinner in a restaurant in the inner-city district of Kreuzberg, I happened to notice a couple of moths attracted to a porch light over the entrance to an apartment building. One was *Euchoeca nebulata* (Scopoli, 1763), a species of damp woodlands not often encountered in urban areas, and the other was *Yponomeuta irrorella* (Hübner, 1796), also a woodland species and one of the most uncommon representatives of the *Yponomeuta* genus in northern Europe.

In this brief article I want to explore some aspects to the biodiversity of Lepidoptera in Berlin, drawing on a mix of available sources along with a preliminary survey of an inner city locality next to the site of the former Wall. I want to suggest that Berlin, at least for the time being, is an exceptionally good urban environment for moths and other invertebrates for three principal reasons: first, the city is one of the "greenest" in Europe in terms of total vegetation cover; second, there is a wide range of biotopes, including extensive wastelands and other ruderal sites; and third, the city has the lowest level of light pollution of any major European city.

The mix of urban habitats in Berlin supports a rich flora and fauna that has been extensively investigated over several decades making Berlin the leading international centre for the study of urban ecology (Lachmund, 2013). A key focus of research has been the distinctive characteristics of urban flora (Sukopp, 1990). In contrast to birds, mammals, and especially plants, however, the invertebrate fauna of Berlin has received much less attention.

The first study of the Lepidoptera of Berlin and its environs was carried out by Johann Siegfried Hufnagel between 1765 and 1767. Over subsequent decades the knowledge of Berlin's fauna developed steadily, but many significant habitats in and around the city were lost, most notably marshlands, meadows and other areas that were drained and cleared for development (Gerstberger and Stiesy, 1990). In the 1970s, a series of articles by Karl Cleve appeared in the *Berliner Naturschutzblätter*

gathering together all the existing Macrolepidoptera (and Psychidae) records for West Berlin (Cleve, 1970, 1974, 1975, 1976, 1977a, 1977b, 1977c & 1978). In the 1980s, the first comprehensive study of both macro- and microlepidoptera for West Berlin was completed showing that around 1,400 species had been recorded in the "island city" (Gerstberger and Stiesy, 1983 & 1987). A further study for the recently re-unified city in 1993 incorporated data not only from former East Berlin but also from the Brandenburg region. This study also marks an important development by including the first regional *Red List* covering all the macrolepidoptera and several families of microlepidoptera (Gerstberger and Mey, 1993). In 2001 a further revision to the Brandenburg Red List was made incorporating a wealth of further survey data (Landesumweltamt, 2001).

Invertebrate surveys for Berlin focusing on ruderal or "wasteland" sites have revealed a high diversity for Lepidoptera, as well as Coleoptera, aculeate Hymenoptera (especially bees, Apoidea) and other groups. These surveys have often played a critical role in attempts to protect vulnerable sites of ecological interest from development pressures (Lachmund, 2013). In one high-profile case an abandoned stretch of railway sidings called the Südgelände was transformed into a nature park because of its high levels of bio-diversity and parallel debates are now taking place in relation to other ostensibly "empty sites" such as the disused Tempelhof Airport (Kowarik *et al*., 2004). The recently completed Gleisdreieck and Nordbahnhof parks also incorporate significant elements of existing ruderal vegetation to produce a distinctively urban ecological synthesis or "wasteland aesthetic" that is now being widely adopted in urban design.

Although the aesthetic and ecological value of wastelands in Berlin and other cities is now more widely recognized such sites remain highly vulnerable to development pressures and other terms such as *Stadtwildnis* (urban wilds) have been used in a German context to emphasize both the cultural and scientific value of marginal or post-industrial spaces (Gandy, 2013).

Urban fieldwork

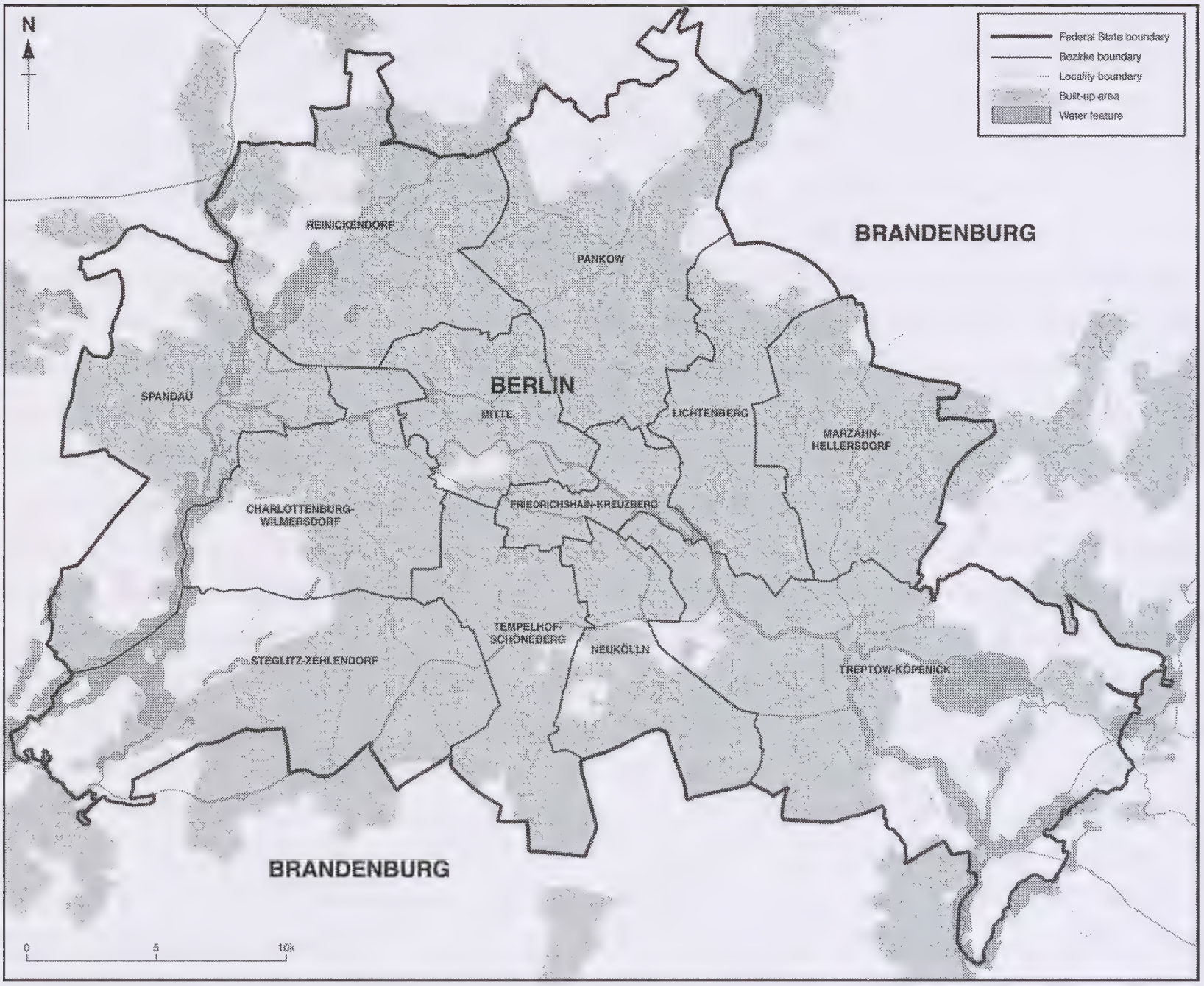
Between 2009 and 2012, I studied an area near the centre of Berlin next to the site of the former Wall on the boundary between the districts of Mitte and Wedding (Map 1). The area comprises extensive wastelands along with parks, cemeteries and part of the city's canal system. Since the reunification of the city in 1990, a range of former security zones now support a network of geo-politically generated waste spaces including strips of abandoned land that have undergone an extended period of ecological succession. In much of Berlin, including the study site, typical adventitious tree species include Grey Alder *Alnus incana*, Silver Birch *Betula pendula*, Aspen *Populus tremula* and the ubiquitous Tree-of-Heaven *Ailanthus altissima*. The precise dynamics of these secondary woodlands has been the focus of intensive study in the city including the impact of variations in soil type, the urban heat island effect and other factors (Kowarik and Körner, 2005; Sukopp, 1990).

In addition to wastelands dominated by plants such as Mugwort *Artemesia vulgaris*, Viper's Bugloss *Echium vulgare*, Canadian Golden Rod *Solidago canadensis* and Tansy *Tanacetum vulgare*, this area of the city also has several municipal parks (including the Volkspark Humboldthain and Park am Nordbahnhof), the Friedhof II der Französisch-Reformierten Gemeinde graveyard (Plate 2), and includes part of the city's canal system (the Berlin-Spandauer Schifffahrtskanal) (Map 2). A small tributary of the river Spree, the Südpanke, also flows through this area, although its course is largely concealed below ground.

My survey of this inner-city neighbourhood used a battery-operated 6W actinic light trap 17 times during 2011 and 2012. The light trap was used 14 times from the second-floor balcony of a block of flats in Neuehochstrasse during 2011 and 2012 and on three further occasions during July 2012 in the nearby Friedhof II der Französisch-Reformierten Gemeinde graveyard in Liesenstrasse (Map 2). The graveyard site includes an open area of lawn, mown infrequently to encourage wild flowers and is only a short distance from a variety of ruderal type habitats including an area of wasteland (now destroyed) and the northern edge of the Park am Nordbahnhof which incorporates an abandoned railway line and parts of the former "death strip" dividing the city. Additional observations since 2009 were also made from dusking on waste ground, the checking of street lamps and other local light sources and the occasional use of "sugar".

A total of 130 species of moths were observed over the study period. Although this limited survey only represents a fraction of the total species recorded in Berlin some interesting results were obtained. Noteworthy records include five species on the 2001 regional Red List for the state of Brandenburg (Landesamt, 2001). Of the Red List species recorded, three are currently placed in the higher category 2 (*Hyles galii*, *Idaea ochrata* and *Xanthia gilvago*) and two in less critical category 3 (*Simyra albovenosa* and *Arctia caja*). Further noteworthy records include woodland/old parkland species such as *Parastichtis suspecta* and *Xanthia ocellaris* and several species associated with dry grasslands or ruderal type habitats including *Calamia tridens*, *Chrysoestia drurella*, *Cucullia fraudatrix*, *Heliophobus reticulata, Heliothis adaucta, Oncocera semirubella* and *Tyta luctuosa*. Also present was the distinctive noctuid *Eucarta virgo*, first recorded in Germany in 1998 and now spreading westwards where steppe-like dry grasslands occur, such as urban wastelands and post-industrial sites (Segerer and Hausmann, 1998). This range extension for *Eucarta virgo* has parallels with the earlier arrival of *Cucullia fraudatrix* in the 1950s and 1960s (Gandy, 2012).

It is interesting to note that several species present in this survey for Berlin such as *Arctia caja, Tholera cespita, Euxoa nigricans* and *Euxoa* "*tritici*" have undergone significant recent declines across the UK (Butterfly Conservation, 2013) whilst the survey also found some species such as *Heliophobus reticulata* and *Trachea Atriplicis* that are now considered extinct in the UK along with several others that have never been recorded in the UK.



Map 1. Berlin local government boundaries in 2013.

Reasons for high biodiversity in Berlin

The last complete survey of Lepidoptera for Berlin (Gerstberger and Mey, 1993), indicates that the total number of macrolepidoptera (larger moth) species is significantly higher than that for London, with 889 recorded for the Berlin-Brandenburg region compared with 715 for the London area (Plant, 1993). These figures should be treated with caution, because differences exist in the status of species, the intensity and geographical scope of recording efforts, and other factors. However, there is evidence that levels of invertebrate diversity are higher in Berlin than in London. In the case of butterflies the difference is even more striking with 115 species recorded for the Berlin-Brandenburg region (Gerstberger and Mey, 1993) compared with 47 in London (Plant, 1987).

Some of the differences between Berlin and London can be attributed to the innately richer Lepidoptera fauna of the Berlin-Brandenburg region irrespective of the degree of urbanization. There are, however, at least three additional factors to consider: the "green" characteristics of the Berlin metropolitan region, the diversity of distinctive urban biotopes such as ruderal sites and the relatively low levels of light pollution.

Berlin has a significantly higher proportion of "green space" in comparison with other European cities (Sukopp, personal communication, 2013). This is partly due to its extensive network of parks, woodlands and waterways (including many lakes), but

Map 2. Study area location map showing key fieldwork sites.

recent geo-political factors have also played a role. In the 1950s the extensive bombsites or so-called *Trümmerlandschaften* (rubble landscapes) played a pivotal role in the emergence of urban ecology as a distinctive field of botany marked by interest in ruderal plant formations including the presence of steppe-like dry grasslands in an urban setting (Lachmund, 2013). In terms of the Lepidoptera fauna, 12 species belonging to the *Cucullia/Shargacucullia* group, which includes many species typical of ruderal or xerophilic sites, have been recorded in Berlin. Other "dry grassland" type Noctuidae recorded for Berlin include *Euxoa obelisca*, *Euxoa aquilina*, *Agrotis cinerea*, *Xestia ashworthii*, *Polia Bombycina* and *Eublemma minutata* (Gerstberger and Stiesy, 1983; 1993).

With the post-war division of the city and the construction of the Berlin Wall in 1961 an extensive network of border zones and inaccessible spaces was created with each component part gradually acquiring its own distinctive ecological characteristics; these were influenced also by artificially restricted development pressures in and around the island city of West Berlin. Following the city's reunification in 1990, a new landscape of abandoned geo-political spaces was produced which provided

Plate 1. The site of the former Berlin Wall, Chausseestrasse, Mitte, July 2007. The site was cleared for development in 2012. Photograph © Matthew Gandy

Plate 2. Lawn left unmown to produce a meadow like habitat in the Friedhof II der Französisch-Reformierten Gemeinde, Mitte, Berlin, July 2012. Photograph © Matthew Gandy

Plate 3. Some moths recorded in the survey of urban Berlin. **1.** *Heliophobus reticulata* (Goeze), Neuehochstrasse, Wedding, 27 June 2012. **2.** *Calamia tridens* (Hufnagel), Friedhof II der Französisch-Reformierten Gemeinde, Mitte, 8 July 2012. **3.** *Eucarta virgo* (Treitschke), Friedhof II der Französisch-Reformierten Gemeinde, Mitte, 6 July 2012. **4.** *Onocera semirubella* (Scopoli). Friedhof II der Französisch-Reformierten Gemeinde, Mitte, 8 July 2012.

Photographs © Matthew Gandy

further opportunities for distinctive types of spontaneous vegetation to develop. More recently, however, development pressures have led to the destruction of many of these ecologically interesting wastelands including a key site along the Chausseestrasse (Plate 1) used for some of the fieldwork in this article.

A further factor that is significant for the nocturnal ecology of Berlin is the low level of light pollution. The increasing use of excessive lighting is now known to have a deleterious effect on birds, bats and night-flying insects (Eisenbreis and Hänel, 2009). Berlin is especially interesting in relation to this debate since it is considered to be the "darkest" city in Europe in terms of low levels of artificial lighting (Kuechly *et al.* 2012). A distinctive feature of Berlin's street lighting is the largest functional network of gas lights anywhere in the world. These gas lights emit a characteristically soft glow towards the yellow end of the spectrum creating less ecological disturbance

in comparison with alternative light sources such as electric sodium lamps or the increasing use of ultra violet street lighting. In 2011, however, the Berlin Senate decided to privatise Berlin's street lighting leading to a politically contentious program to replace this network; a citizens' movement has been set up to defend the city's distinctive lighting system on both cultural and ecological grounds (Barteis, 2012). Light pollution is now a growing source of concern in many European countries, but there is as yet no EU-wide set of guidelines or regulations to alleviate this problem.

Conclusions

The Berlin experience raises several implications for urban nature conservation. Nature conservation policies have often overlooked the significance of cities as centres for bio-diversity. Urban biotopes can support a rich invertebrate fauna including many species that are scarce or even absent elsewhere (Leong, 2012). Wastelands in particular can provide a niche for many species adapted to dry grasslands and warmer sites whilst cemeteries, parks and even gardens can contain a unique mix of veteran trees and other significant foodplants. With intensifying development pressures on wastelands and ruderal sites there is now growing interest in the significance of other urban habitats such as cemeteries. There is a sophisticated level of public debate over urban nature in Berlin fostered by decades of research on the city led by the botanical studies of the Technical University's Institute for Ecology. As a consequence urban ecology has featured significantly in urban policy making since the late 1970s with high-level scientific representation in key areas of policy deliberation. The proportional representation voting system for the Berlin Senate has also allowed a clear environmental agenda to be pursued since the late 1970s (promoted initially through the Alternative List and then by the Green Party). Earlier successes with the protection of the Südgelände site in the 1990s have enabled an ecologically sensitive approach to park design and public interest has been fostered through events such as the annual "long day of urban nature" (including moth observation opportunities).

Acknowledgements

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OBITUARY

Robert 'Bob' Stephen George FLS, FRES
1921 - 2013

Robert 'Bob' Stephen George FLS, FRES,
5 May 1921 – 9 November 2013

Bob George will be known to, and remembered by, many British entomologists for two things: Fleas and Marris House Nets. He was a memorable character with an infectious enthusiasm for natural history and a notable ability to exploit all branches of the media with a quirky story (anything involving fleas seems to be quirky to the media). A stocky figure with a shock of snow-white hair, lively blue eyes, a soft Gloucestershire 'burr' to his voice and an unerring ability to engage people in conversation, Bob was a familiar presence at entomological events throughout Britain for more than fifty years.

Bob was an amateur entomologist and proud of it. He had benefited from his contacts with both professionals and other amateurs as he developed his own skills, and enjoyed 'passing on the baton' of knowledge to others. However, he had little time for some aspects of modern life, not least 'political correctness' and willful use of jargon.

Born on 5 May 1921 and brought up in Gloucester, he attended The Crypt School, where his interest in biology began. Bob joined the Royal Air Force in March 1941 and, after training as a pilot in the USA and at Peterborough, he flew Spitfires with 616 Squadron, mainly for ground attack and escorting bombers. In June 1944, Bob and the rest of 616 converted to Gloster Meteors, the world's first tactical jet aircraft. After only five training sorties 616 pilots were declared operational on jets, intercepting V1 flying bombs from Kent and later on ground attack missions over Germany. Bob left the RAF in 1946, having become one of the most experienced jet pilots in the RAF.

Bob returned home to Gloucestershire, to train as a biology teacher and then to teach at his old school. His interest in fleas developed in 1950 from an infestation of house mice at his flat in central Gloucester. The mice were using his flat as a short cut between a bakery and a grocery shop. Bob trapped some mice, found fleas on one

and sent the fleas to Frans Smit, then the Curator of the Rothschild Collection of Siphonaptera at Tring Museum. Smit told Bob that one the species was known from only seven other sites in Britain and published a short note on the record. Other finds ensued, and Bob was then in correspondence with Smit and the Hon. Miriam Rothschild. From such a chance occurrence, a life-time's interest developed. Bob deferred to Smit, and sometimes to Miriam Rothschild, but he soon became recognised as 'The Flea Man' and the national expert, keen to promote interest in fleas among as many people and as widely as possible.

Having soon mastered the identification of the British species, studying the distribution of flea species became the main objective of his interest in fleas. He progressed in his teaching career and later moved to Cambridgeshire where, in his spare time, he initiated a national recording scheme for fleas, linking with Gordon Thompson who had a similar interest in ticks (Ixodoidea). All this had started several years before the Biological Records Centre (BRC) was set up in 1964, so that by 1969 BRC reported that Bob had collated 10,000 records of some 70 species of fleas. BRC published 60 distribution maps of fleas as Part 4 of the *Provisional Atlas of the Insects of the British Isles* series (George, 1974), together with brief notes on their hosts. Bob involved BRC with the *Everyweek Survey* aimed at assessing the potential for primary school children in entry levels of biological recording. This brought together his professional role in education with his other life as an experienced amateur naturalist through the educational journal *Everyweek*. There is no doubt that Bob was a pioneer in what is now referred to as "citizen science" – his aptitude for science communication and his ability to engage people in recording fleas, despite the obvious challenges this group presents, was inspiring.

Bob publicised his recording scheme, through the media, at entomological gatherings, and by publishing county lists and other notes. But the main reasons for his success in gathering-in many thousands of records were that he provided a free identification service, he gave feedback to anyone that sent him specimens and, if they showed the slightest interest in fleas, a steady flow of encouragement and advice on all aspects of flea recording. His horror stories of badly packed collections of live fleas and of animal and bird nests containing fleas were legendary and pay tribute to his wife Dorothy and their family, who had to endure these periodic invasions. Late in life, BRC was able to help Bob bring some closure to his study of the distribution of fleas with the publication his *Atlas of the Fleas (Siphonaptera) of Britain and Ireland* (George, 2008) and he was awarded Honorary Membership of the National Biodiversity Network Trust in the same year for his contribution to flea studies. However, in a letter to one of us soon after the *Atlas* was published, he remarked that he was identifying 800 slides from Manchester Museum and completing BRC cards for the records. It was only in 2012, when he moved into a care home, that he finally had to give up his entomological activities, although he continued to read journals with interest.

It is through his interest in fairy flies (Hymenoptera: Mymaridae) that Bob got the idea of producing his own Malaise traps – out of necessity. Mymaridae are usually

difficult to sample, but Malaise traps are effective, and at that time these traps were not easily available to entomologists in Britain. Thus Marris House Nets was born. The company took its name from the family home at Duxford near Cambridge and the logo featured a winged fairy. Bob, ably assisted by Dorothy and a few locally recruited seamstresses, took a very professional approach to their new business and soon Marris House Nets diversified into other entomological equipment. Their traps and nets rapidly became standard equipment for the growing number of expeditions to tropical regions and they were known for their quality and the reliability of service. Some years after Bob had retired from teaching and he and Dorothy had moved to Bournemouth, the business 'Marris House Nets' was sold and is now owned and run by Brian and Shirley Nelson as B&S Entomological Services.

Bob never seemed to get to grips with the fairy flies themselves. Although he had many thousands of specimens, the literature was obscure and the demands of his work in education, his flea recording scheme and his company left little time to make progress with this study. His collection of Mymaridae was donated to the Ulster Museum.

Bob donated his flea records to BRC and many can now be accessed via the NBN Gateway. His flea collection has been donated to the Natural History Museum, London.

Bob contributed so much to our understanding of these exquisite and fascinating insects but also to the world of biological recording and how to engage and inspire people (young and older) to contribute their wildlife observations. His legacy to biological recording went far beyond the fleas he so enjoyed. Our understanding of the natural world will always be enriched beyond value by the dedication from people like Bob George.

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Bedstraw Hawk-moth *Hyles gallii* (Rott.) (Lep.: Sphingidae) recorded in north Kent

We visit our daughter in Meopham, Kent a few times each year and I encounter moths in her garden in greater numbers and often in better quality, than I ever do here. Three nights in late July 2013 produced 107 species of macros, including some extreme Mottled Beauty *Alcis repandata* (L.) f. *conversaria*. A visit in late August 2013 produced 70 macro species including a Jersey Tiger *Euplagia quadripunctaria* (Poda) and my first Tree-lichen Beauty *Cryphia algae* (Fabr.), both of which now appear to be firmly established in that area of Kent.

A pre-midnight inspection of the trap on 23 August revealed many moths, but *C. algae* was the only species of note. The following morning, however, I was amazed to find a large Bedstraw Hawk-moth *Hyles gallii* in the trap. As immigrants were scarce during the three nights, with just three Dark Sword-grass *Agrotis ipsilon* (Hufn.) and five Silver Y *Autographa gamma* (L.), this was a most unexpected and exciting capture. The moth is unusually large, spanning 92-93 mm from wing tip to wing tip. Manley (2008. *British Moths and Butterflies, a Photographic Guide*) gives 70 mm, whilst both Gilchrist (1979. In Heath & Emmet, Eds. *Moths and Butterflies of Great Britain and Ireland* volume 9. Curwen) and Skinner (2009. *Colour identification guide to moths of the British Isles*. Apollo) give 78 mm.

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Have you seen this moth? *Diachrysia stenochrysis* (Warren) – past, present and future

Past

During 2010, CWP provided an up to date review of the published results of European research into the status of the two sister taxa *Diachrysia chrysitis* (L.) and *D. stenochrysis* (Warren). A significant body of evidence suggested that these two taxa are probably separate species, though not all researchers agree, with some preferring to treat them either as subspecies or as actively diverging, but not yet fully diverged, species. Several European authors appear to be of the opinion that the form *juncta* Tutt, 1892 (= *Diachrysia tutti* Kostrowicki, 1961) of the Burnished brass *Diachrysia chrysitis* (L.) are referable to *D. stenochrysis* (Warren), but there is now compelling evidence, based on the use of pheromone lures (Plant & Dowman, in prep) and on molecular analysis (here presented), that this is not the case.

More recently, Sean Clancy (in Clancy, Top-Jensen & Fibiger, 2012) included *D. stenochrysis* in his popular guide to British moths, on the basis of examples from Kent and Inverness which are said to show differences in the genitalia. However, his supporting illustration is almost certainly an example of f. *tutti* of *D. chrysitis*. In the new *Checklist of the Lepidoptera of the British Isles* compiled by Agassiz, Beavan & Heckford (2013), *D. stenochrysis* features only in the Appendix of "Questionable Records" where the authors state that they follow Karsholt & Nielsen (2013). These Danish authors gave "Observation Status" to *stenochrysis* citing Rezbanyai-Reser (2012) and Miller & Erlacher (2005) as examples of proof that that there was not enough evidence to consider it as a separate species.

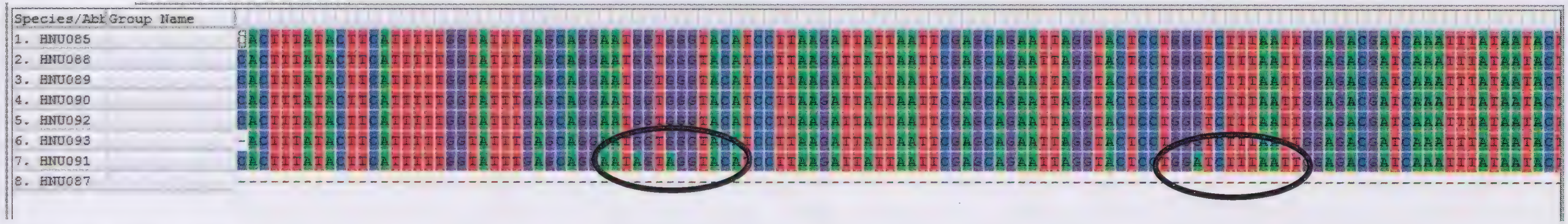
Present

During 2013, BKB examined the base-pair sequence on the CO1 portion of the mitochondrial DNA of a small number of British specimens sent to him by CWP. These included both "good candidates" for *stenochrysis* as well as examples of f. *tutti* and, as an experimental control, some that were certainly *chrysitis*. As this was considered to be a pilot study, only a small number of specimens were examined. Of nine samples submitted:

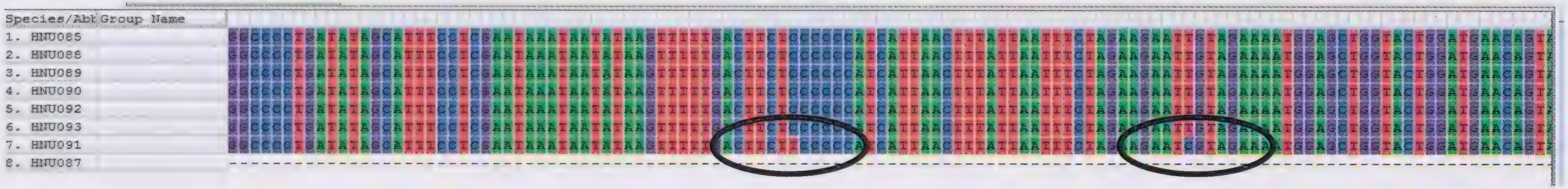
- DNA could not be extracted from one;
- The DNA bar code was identical for seven, including the *chrysitis* control specimens (Plate 1, figs 1 – 4 and three more not illustrated here);
- One specimen (Plate 1, fig. 5) had a different bar code, with eight differences over 488 bases (1.64%).

It is of interest, albeit statistically irrelevant given the very small sample size, that the specimen producing the different bar code was the one considered in advance to be the most likely candidate for being *stenochrysis*. This, taken together with the complete lack of any molecular variation at all between typical and form *tutti* examples of *chrysitis*, leads us to believe that there may well be evidence that *stenochrysis* is a valid species that affects Britain. However, it also demonstrates that the wing characters alone are likely to be unsatisfactory for separating these taxa.

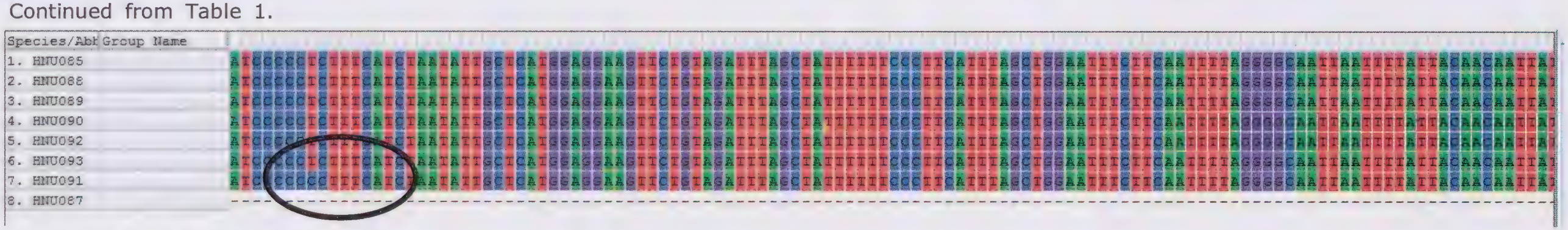
Plate 1. British examples of *Diachrysia* species. 1 & 2: *D. chrysitis* – typical forms (control specimens); 3 & 4: *D. chrysitis* f. *tutti*, with base pair sequence identical to control examples; 5: *Diachrysia* ?*stenochrysis*, with CO1 sequence showing 8 base-pair differences compared to control; 6: *Diachrysia* ?*stenochrysis* – not examined. This last moth was not retained by the captor; it is shown because it is almost certainly *stenochrysis*. A near identical example from Denmark is illustrated in volume 10 of *Noctuidae Europaeae* (Plate 13, fig. 21) as *stenochrysis*. [Specimen data: 1: Tyldesley, Manchester, 26.vi.2009, leg. C. W. Plant (HNU092); 2: Tring STW, Hertfordshire, 9.vi.2007, leg. C. W. Plant (HNU093); 3: Meldreth, Cambridgeshire, 30.viii.2011, leg. J. Reid (HNU085); 4: Tremayne Farm, Cornwall, 20.ix.2003, leg. A. Spalding (HNU087); 5: Downham Market, Norfolk, 20.viii.2012, leg. R. Edmunds (HNU091); 6: Monkseaton, Northumberland, 23.vii.2012, photographed by captor, M. S. Hodgson, but specimen not retained.]



Continued from Table 1.



Continued from Table 1.



Continued from Table 1.

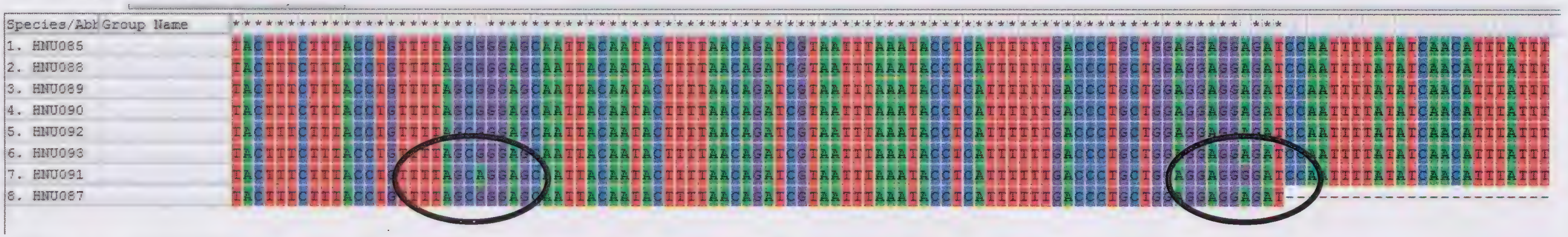


Table 1. COI sequence of the samples numbered HNU085-HNU93. These results show that HNU091 (Plate 1, fig. 5) is different from the others as shown in the circled areas.

Future

We therefore want to examine more examples of possible *stenochrysis* during 2014 and so we are now appealing for material. Please send to CWP in England. We only want "seriously good candidates" for *stenochrysis* – but we want lots of them! The two green forewing bands need to be joined in a green "H-shape" in which the thickness (front to back) of the horizontal bar is a *minimum* of three millimetres. Please either send the whole moth (which can be returned at the end of the project, if desired) or if you prefer not to part with your prize cabinet specimens please send us a couple of legs (in a paper triangle is ideal for posting) *together with* a good quality photograph of the moth, ideally via e-mail, showing the forewing pattern clearly. In all cases, we need to know the place and date of capture. It is not necessary for moths to be in good condition; please do not relax and set specimens before sending to us – relaxing is the first stage of tissue decay and causes damage to the DNA.

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Coleophora binderella (Kollar) new to Northern Ireland (Lep.: Coleophoridae)

Amongst a batch of moths sent by Kenny Murphy (Co. Armagh) to JC for determination was a single *Coleophora binderella* (Kollar). This moth was swept from Bell Heather *Erica cinerea* at Straduff Bog in Co. Tyrone (Irish grid reference H 3466) on 26 June 2013. Around the periphery of the heath was much birch *Betula spp*. and Hazel *Corylus avellana.* This appears to be the first record for Northern Ireland. It is also only the second for the whole of Ireland, the first being from Glencar, Co. Kerry by B. P. Beirne after 1939 (Beirne, 1941. A list of the Microlepidoptera of Ireland. *Proceedings of the Royal Irish Academy* **47**(B)4: 53-147; dissected specimen in National Museum of Ireland, seen by KGMB).

Kenny Murphy also informs us that he saw several dark *Coleophora* over another area of Heather, but all dropped low when he tried to sweep. He did manage to obtain one specimen and this was sent indirectly to KGMB who dissected it and thus identified it as *Coleophora juncicolella* (Stainton) a species known in Ireland from only the Burren and Killarney.

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Moths new to the Isle of Wight in 2013

A record number of four species of macro-moth and eight species of micro-moth was recorded as new during 2013. The details of these records are given below.

Ectoedemia decentella (H.-S.) Nepticulidae – the identification of one caught at Freshwater on 5.ix.2013 by Dave Cooke was confirmed by Mike Wall;

Argyresthis trifasciata (Stdgr.) Argyresthiidae – one taken at Freshwater on 16.vi.2013 by Dave Cooke was confirmed by Mike Wall;

Parachronistis albiceps (Zell.) Gelechiidae – one at Shanklin on 13.vii.2013 was recorded by Iain Outlaw;

Batrachedra pinicolella (Zell.) Batrachedridae – one at Freshwater on 13.vii.2013 by Dave Cooke, later confirmed by Mike Wall;

Coleophora prunifoliae (Doets) Coleophoridae – was record at Niton, when John Langmaid and Steve Palmer found several larval cases from which three adult moths later emerged;

Zeiraphera ratzeburgiana (Saxesen) Tortricidae – one taken at Briddlesford Copse on 10.viii.2013 by Stephen Plummer;

Cydalima perspectalis (Walker) Crambidae, Box Tree Moth – one at Bonchurch on 28.vii.2013 was caught by James Halsey. In addition to being new to the Isle of Wight, this melanic form may be the first melanic example recorded in Britain;

Spoladea recurvalis (Fabr.) Crambidae – One at Bonchurch on 2.x.2013, by James Halsey;

Pechipogo plumigeralis (Hb.) Erebidae, Plumed Fan-foot – one on 30.viii.2013 and another on 3.ix.2013 at Bonchurch, both recorded by James Halsey;

Sideridis albicolon (Hb.) Noctuidae, White Colon – one on 5.vii.2013 at Newtown, caught by Tim Norriss;

Autographa bractea (D.& S.) Noctuidae, Gold Spangle – one taken by myself at Totland on 15.vii.2013;

Acontia lucida (Hufn.) Noctuidae, Pale Shoulder – one photographed on a flower on 2.viii.2013 in his garden in Ventnor, by Andy Butler.

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The White Point *Mythimna albipuncta* (D. & S.), now probably resident in South Cambridgeshire (Lep.: Noctuidae)

For many years, the White Point was considered as an immigrant, occasionally becoming a temporary resident on the south coast and in particular the south-east of England. Bernard Skinner reported this status in 1984 (*Colour Identification Guide to Moths of the British Isles*. Viking), noting its occurrence along the coast from Norfolk to Cornwall, but in his 2009 update of the same title (Apollo Books), he also added that the species was currently considered to be resident in Sussex, Kent, Surrey, Berkshire, Hertfordshire and Suffolk. The Norfolk Moth Group reported an increase in records from about 2000 and by 2012 the species was recorded from 89% of the 10K squares in the county. Between 4 September the 19 October 2013, over 250 specimens were reported from Vice Counties 27 and 28 (East and West Norfolk). Of these, 26 were recorded in O. S. ten-kilometre grid square TG 51 (Caister/Winterton) on 5 September 2013. Suffolk records seem to be mainly in the east of the county and the Suffolk Moth Group (*www.suffolkmoths.org.uk*) consider it resident in this area. By reference to Hill *et al*. (2010. *Provisional Atlas of the UK's Larger Moths*. Butterfly Conservation), it can be seen that the density of records lies mostly to the south-east of a slightly concave line from The Wash to Lyme Bay. A scattering of records can be seen to the south of Cambridge (TL 45) and to the north and east of Cambridge, in Cambridgeshire, Bedfordshire and Northamptonshire. Apart from a few records on the coast of Lincolnshire and South-east Yorkshire, the distribution stops at the line defined by the Ordnance Survey as 3° north.

My own garden falls within the area of the scattered records south of Cambridge and through the shielding effect of houses and tall trees is not well placed to be on the migration route of moths heading north. My first record of the White Point was in 2008 and after missing 2009, it appeared in increasing numbers from 2010 onwards, with some specimens in very fresh condition. Records are shown below:

2008		**2010**		**2011**		**2012**		**2013**	
Date	number	Date	number	Date	number	Date	number	Date	number
11.ix	1	8.ix	1	9.ix	1	6.ix	2	23.viii	1
						7.ix	1	25.viii	2
						8.ix	1	27.viii	1
						9.ix	1	28.ix	2

With this many moths, annual occurrence and the absence of other migrants around the same time, the conclusion must be that the species is now breeding locally.

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The rediscovery of *Scrobipalpa pauperella* (Heinemann) (Lep.: Gelechiidae) in Britain

In late January 2014, CHF passed over to HEB five moths that he had collected at mv light on 12 June 2013 at Ellington Banks MoD military training area, near Ripon, North Yorkshire (VC 64). He had originally thought them to be *Scrobipalpa obsoletella* (Fischer von Röslerstamm), but subsequently had doubts about their identity.

At first sight of the moths HEB could see that they were not *S. obsoletella* despite them being unmounted examples, they were clearly too dark for that species; in fact they looked like undersized examples of *S. acuminatella* (Sircom). Of the five moths in the sample one was larger than the others and on dissection that indeed proved to be a male *S. acuminatella*. The remaining four, all males, had identical genitalia and were clearly the same species as each other – though not *acuminatella*. Using the key to the male genitalia of the genus *Scrobipalpa* (Parsons, M.S. & Sattler, K. in Emmet & Langmaid, 2002, *The Moths and Butterflies of Great Britain and Ireland* vol. 4 part 2) they keyed out convincingly to *S. pauperella* and reference to the illustrations of the posterior processes of the vinculum in Sattler (1989. The taxonomic status of *Scrobipalpa klimeschi* Povolný, 1967, and *Lita pauperella* Heinemann, 1870 (Lepidoptera: Gelechiidae) *Entomologist's Gaz.* **40**: 7-12 plate 3) reinforced that opinion. In view of the current status of *S. pauperella* it was felt that independent confirmation of the determination was desirable so a male genitalia slide was sent to Dr David J. L. Agassiz who promptly replied that the genitalia agreed perfectly with his own slides of *S. pauperella*.

Scrobipalpa pauperella has remained something of an enigma since being introduced to the British list by Agassiz (1986. *Scrobipalpa klimeschi* Povolný (Lepidoptera: Gelechiidae) new to Britain. *Entomologist's Gaz.* **37**: 33-35) from a total of seven specimens taken in June 1972 and June 1973 at Chippenham Fen, Cambridgeshire, but not determined until over a decade later. Subsequently Sattler (1989, *loc. cit.*) resolved the taxonomic problems surrounding this taxon and applied to it the name *Scrobipalpa pauperella* (Heinemann). Despite subsequent searches, all attempts to re-find the moth at Chippenham Fen proved unsuccessful and the most recent British checklist (Agassiz, D. J. L., Beavan, S. D. & Heckford, R. J., 2013, *A checklist of the Lepidoptera of the British Isles*) treats *S. pauperella* as extinct in Britain.

Following the determination of the Ellington Banks moths taken in 2013 as *S. pauperella* a photograph of the male genitalia of a moth, one of two, taken at the same locality on 25 May 2011 by CHF and initially also thought to represent *S. obsoletella* was sent to HEB for re-examination. That also proved to be of *S. pauperella*. This occurrence was published as a new VC 64 record of *S. obsoletella* in Langmaid, J. L. & Young, M. R. (2012. Microlepidoptera Review of 2011. *Entomologists' Rec. J. Var.* **124**: 265). Since the record has proved to be based on a misidentification the occurrence of *S. obsoletella* in VC 64 remains unconfirmed.

Further moths were recorded at mv light at Ellington Banks, singly on 8 July 2011 and four on 27 June 2012; these were dissected by CHF and had genitalia identical to the moth taken on 25 May so were also thought to be *S. obsoletella*. Given the number of individuals that have been recorded at the Ellington Banks site there is a strong likelihood that *S. pauperella* is resident there. If so it will permit investigation of the biology of the species which is currently unknown in Britain. The site is an area of mature mixed woodland with open areas of herb rich magnesian grassland containing several small ponds formed largely in bomb craters; the moths were trapped near one of the wetter areas of the site.

Our thanks are extended to the Ministry of Defence for allowing access to the Ellington Banks MoD site and to David Agassiz for his confirmation of the initial determination.

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Some notes on Microlepidoptera in West Norfolk, VC28 in 2013

The Breckland of East Anglia is well known as a special place for flora and fauna in the UK and during 2013 we made many day trips to Cranwich Heath, Weeting Heath, Lynford Arboretum and Santon Downham to look for moths. The following are notable records including five new County or Vice county species records and two new foodplants.

Ectoedemia sericopeza (Zeller) (Nepticulidae) – Lynford Arboretum, 28.vii.2013. One active mine was collected from a Norway Maple *Acer platanoides*; an adult

emerged on 30.viii.2013. Two more active mines were also found on a subsequent visit and bred through. This was a new species record for Norfolk.

Ectoedemia turbidella (Zeller) (Nepticulidae) – Hockwold cum Wilton, 30.xi.2013 Plate 1, Fig. 1). Mines were found in fallen leaves of some roadside Grey Poplar *Populus canescens*. We had stopped to check for signs of *Phyllocnistis xenia*, the mines of which we had previously found in some numbers at Weeting Heath and also for *Phyllonorycter comparella* (see below). Two leaves with feeding larvae were collected and retained. This was a new species record for Norfolk.

Stigmella assimilella (Zeller) (Nepticulidae) – NWT Weeting Heath 17.vii.2013 Plate 1, Fig. 2). While looking at a small clump of Grey Poplar *Populus canescens* for more *Phyllonorycter comparella* mines (see below), I noticed a leaf with four *Stigmella* mines in it which I thought must be *S. assimilella*. Three of the larva had vacated successfully, the fourth had died in the mine. On returning home I found that the UK Leafmines web site (*www.leafmines.co.uk*) had no reference to *S. assimilella* using *P. canescens* although the UK flymines web site (*www.ukflymines.co.uk*) had this association down for other places in Europe. The Dutch web site (*www.bladmineerders.nl*) did list *S. assimilella* as using *P. canescens*, but added that *P. tremula* was the most important foodplant. I contacted Rob Edmunds and he agreed with my identification. This is thought to be the first documented record of *Stigmella assimilella* on this foodplant in the UK.

Leucospilapterix omissella (Stainton) (Gracillariidae) – Weeting Heath, 21.vii.2013. Three typically inflated mines in Mugwort *Artemisia vulgaris* were collected. These were found to have been vacated. On 17.viii.2013, eight second generation occupied mines were collected from the same area, from which four larvae were observed going down to pupate. I tried a mix of leaf litter and cut grass stems but this did not appear acceptable to the larvae, but a potted Viper's Bugloss *Echium vulgare* that had died back was readily used by all four. We hope to see an adult or two emerge this year. This was a new species record for West Norfolk (VC 28).

Caloptilia semifascia (Haworth) (Gracillariidae) – Lynford Arboretum, 1.ix.2013. After previously finding *Ectoedemia sericopeza*, we looked at all the *Acer* sp. we could find in the arboretum. There were cones on Silver Maple *Acer saccharinum*, similar to those made by *Caloptilia semifascia* on Field Maple *Acer campestre*. Four cones were collected (Plate 1, Fig. 3), a larva was exposed and photographed (Plate 1, Fig. 4), and later found to fit the description of *C. semifascia*. One adult was reared through. Identity of *Caloptilia semifascia* (male) was confirmed by examination of the genitalia (IB). Silver Maple is native to North America. This is thought to be a new foodplant record for this species.

Phyllonorycter comparella (Duponchel, 1843) (Gracillariidae) – Weeting Heath, 17.viii.2013. After previously finding over 100 *Phyllocnistis xenia* mines on a clump of Grey Poplar *Populus canescens* (one tree and many suckers), we decided to see if the number of mines had increased, and to look for other species. Five *Phyllonorycter comparella* mines were found, one having the pupal exuviae protruding from the mine, two having the coffin shaped pupae of a hymenopterous parasite, and two containing dead larvae. This was a first species record for Norfolk.

Plate 1. 1. *Ectoedemia turbidella* mines in a mature leaf of *Populus canescens*, Hockwold cum Wilton VC28. I. Barton); 2. *Stigmella assimilella* mines in *Populus canescens*, Weeting Heath. I. Barton); 3. Cone of *Caloptilia semifascia* using *Acer saccharinum*, 1.ix.2013, Lynford Arboretum, VC28. I. Barton); 4. Larva of *C. semifascia* in cone on *Acer saccharinum*. I. Barton); 5. *Tinagma ocnerostomella* larva, exposed in stem of *Echium vulgare* from Santon Downham, VC28, I. Barton); 6. *Tinagma ocnerostomella*, ex stem mine, Santon Downham, VC28, emerged 20.vii.2013. I. Barton)

Tinagma ocnerostomella (Stainton) (Douglasiidae) – Santon Downham, 23.ii.2013 and Weeting Heath 25.vi.2013. We collected 50 stems of Viper's Bugloss from a meadow north of the railway line in Santon Downham. These were netted and left outside in a shady part of the garden to see if any *Tinagma ocnerostomella* would emerge. On 11.vi.2013, I opened up five stems before I found a larva with a single large, upturned cremaster which, after some deliberation, I felt sure was *T. ocnerostomella* (Plate 1, Fig. 5). I tied the stem back up with a grass blade in the hope of keeping the larva going. On our way back home from Cranwich Heath, just before dusk, on 25.vi.2013 we stopped off at the forestry track which is now part of the Norfolk Wildlife Trust's Weeting Heath Forest Walk. Nightjars *Caprimulgus europaeus* had been seen here and we also knew that there were many Viper's Bugloss plants along the side of the track. The first plant I tapped produced a *T. ocnerostomella* which was netted and potted up. We caught and potted another. This is an area that gets a lot of sun, as is the area that the stems were collected from. From then on I kept the net with the stems in the sun, giving them an occasional sprinkle of water. A total of 14 adults emerged by 20.vii.2013 (Plate 1, Fig. 6). These are the first records for VC28 since 1937.

Scythris picaepennis (Haworth) (Scythrididae) – Cranwich Heath, 18.vi.2013. A single male of this species was obtained by sweeping flower-rich grassland. Identity was confirmed by IB by means of genitalia examination. The moth's foodplant, Bird's-foot Trefoil *Lotus corniculatus*, was common across the site. Five others were swept on three subsequent visits. This was a new species record for Norfolk.

Coleophora trochilella (Duponchel) (Coleophoridae) – Weeting Heath, 10.vi. 2013. Three *Coleophora* larvae were collected and bred through, two from Mugwort *Artemisia vulgaris* and one from Tansy *Tanacetum vulgare*. All three were confirmed as *C. trochilella* by genitalia (IB). The only other record for Norfolk since the splitting of *C. troglodytella* into *C. trochilella* and *C. follicularis* by Bradley in 1962 was at East Wretham in June 1974 (R. W. J. Uffen).

Thanks are due to Rob Edmunds and Jim Wheeler for their comments and suggestions about this note and for their help throughout the year.

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Unusual variation of *Argyresthia* sp. (Lep.: Argyresthiidae) = *Argyresthia goedartella* (Linnaeus, 1758) f. *literella* (Haworth, 1828)

Gandy (*Antea*: 7) provides an intriguing photograph of an *Argyresthia* species that was thought to be a variation of *A. brockeella* (Hübner, [1813]). The moth was not kept and so no genitalic examination could take place. Gandy rightly comments that it was sensible to share the image in the pages of this journal in the hope that someone, somewhere, had a named specimen with similar markings.

We each have a specimen with similar markings, THF's from Richmond Park, Surrey in 2010 and RJH's from Fingle Bridge, Devon in 1974. Both have been

dissected and, as suspected, they are *Argyresthia goedartella* (Linnaeus, 1758) form *literella* (Haworth, 1828). In fact Haworth described *literella* as a good species, placing it in the genus *Tinea*, but it was subsequently found to be merely a junior synonym of *A. goedartella*.

Agassiz (1996. In Emmet, A. M. (Ed.), *The Moths and Butterflies of Great Britain and Ireland. Volume 3*, pages 79-80) describes f. *literella* as having the costa entirely white so that the forewing has no complete fascia. Unfortunately the accompanying illustration on plate 10, fig. 14 does not reflect this description, as it depicts a specimen which is suffused with a brassy colouration, with no white on the forewing. Possibly as a result of this, various on-line photographs purporting to be f. *literella* are not that form, but resemble fig. 14 on plate 10.

Together with Matthew Gandy we are preparing a fuller account, including photographs, of both our specimens for this journal. In the meantime, if anyone else has a photograph of a similar moth we or Matthew Gandy would be pleased to hear from them.

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Pocock's Wood near Peterborough – only one moth with three light-traps running all night in broad-leaved ancient woodland in late May 2013!

The spring of 2013 was a late cold one, with prolonged cold weather lasting well into April and below average temperatures continuing until summer really began at the end of June. For a truly and unbelievably awful result for both light-trapping for adult moths and for beating for caterpillars, the field meeting of the British Entomological & Natural History Society (BENHS) at Pocock's Wood, Peterborough, on 23 May 2013 takes some beating. The flora of Pocock's Wood suggests it is probably ancient in origin, with Dogs Mercury *Mercurialis perennis*, Bluebells *Hyacinthoides non-scripta* and Wild Ramsons *Allium ursinum* amongst the plants on the woodland floor, an understorey which includes Field Maple *Acer campestre*, Hazel *Corylus avellana*, Hawthorn *Crataegus* spp. and Crab Apple *Malus sylvestris* below a canopy of mature Peduculate Oak *Quercus robur* and Ash *Fraxinus excelsior*. The wood looks like it should be a very productive site for moths. Indeed, the similar Mucklands Wood on the other side of the road to Marholm has produced good catches of moths in past years (Waring, 1995. *The moths of Mucklands Wood, Peterborough, Northants., TF1501*. Huntingdonshire Moth and Butterfly Group. 5th Annual Report: 34-37). Likewise for the nearby woodlands of Hilly Wood (Waring, 1995. *The moths of Hilly Wood, Helpston, Northamptonshire, TF1104*. Huntingdonshire Moth and Butterfly Group. 5th Annual Report: 23-24) and Oxey Wood (Waring, 2004. *The moths of Oxey Wood, Milton Estate, near Helpston, Northamptonshire, 2001-2003*. *Ent. Rec.* **116**:

218-219) and for other woodlands of the Milton Estate (Waring, 1992. *Moth recording on the Milton estate, Peterborough, 1991.* Huntingdonshire Moth and Butterfly Group. 2nd. Annual Report. 17-26). On the night of 23 May 2013, it was calm within the wood and there was 100% cloud cover so at least these factors were promising for moths. But it was one of a number of nights at this time which felt cold, wet and raw, with a temperature all night of only 5°C. I operated two 125 watt mercury-vapour Robinson pattern light-traps and one 6 watt actinic Heath trap all night. In the morning the total catch for the three traps combined was just one moth – a female Shuttle-shaped Dart *Agrotis puta.* James Fisher spent 30 minutes beating for caterpillars with my beating tray in the understorey of the wood near the trap-sites, while Mick Beeson and I set up the traps, but he found none at all – not even a single larva of the normally numerous Winter moth *Opheroptera brumata*. This was quite the most amazingly bleak result I have ever had in English woodland in late May which is usually a time with a wide variety of moths on the wing and the population densities of caterpillars on Hawthorn at peak numbers for the year. We would like to thank James Fisher, Biodiversity Officer for Peterborough City Council for making the necessary arrangements for us to record moths in this wood.

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Even pheromones can spring surprises

There is always a slight sense of excitement when opening a moth trap in the morning, especially if it has been out all night in a habitat that you have not worked before. Will there be something unexpected in there? When using a pheromone trap, the result is more predictable – usually.

With warm weather established in early July 2013, I put out a pop-bottle trap, baited with a pheromone cap to monitor my fruit cage for Raspberry Clearwing *Pennisetia hylaeiformis* Lasp. Nothing happened immediately but, on the evening of 18 July 2013, when I entered the fruit cage to pick some raspberries, I noticed two dead moths in the trap. It had been a hot day and the trap must have overheated in the sun. It was immediately obvious that they were not the intended target and closer inspection showed that they were both Orange-tailed clearwings *Synanthedon anthraciniformis* Esp. Currant clearwing, *S. tipuliformis* Linn. or Red-belted Clearwing, *S. myopaeformis* Borkh. might have been explicable, as host plants for both were adjacent, in or around the fruit cage, but there is no *Viburnum* in my garden, nor in any of the neighbours. I trapped a few orange-tailed clearwings on some *Viburnum* bushes over half a mile away, but it seems very unlikely that this was the source of my moths. The reason for their occurrence in my trap remains a bit of a mystery and even more so because there were two, not just one random wanderer.

Such obvious potential causes as having picked up the wrong pheromone cap can be ruled out, as my source of pheromone for Raspberry Clearwing was an American

supplier who distributed the caps in sealed metal foil packets. Error at the manufacturing end is also impossible, as Orange-tailed Clearwing does not occur in the USA and my supplier therefore does not manufacture its pheromone. Retained in the freezer at -18°C, there should not have been great decomposition, but I cannot help wondering if one of the breakdown products of my Raspberry Clearwing pheromone is close enough to the structure of the Orange–tailed Clearwing pheromone to be attractive to that species. I have more pheromone still in the freezer, so next year I must test it for both species, at sites that I know should produce moths.

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Comibaena bajularia (D. & S.) the Blotched Emerald (Lep.: Geometridae) ab. *rosea* Cockayne

On 20 July 2013, I took a striking moth in an MV trap at Blythburgh, Suffolk – a male *Comibaena bajularia* (D.& S.), a bit worn, but clearly of an overall pinkish rather than green hue. It was photographed to ensure a record of the original colour. On 22 July 2013 a second similar specimen, again a male was taken at light though more worn.

Prout 1938. In Seitz. A. (ed.) *The Macrolepidoptera of the World. Supplement to volume 4*. Stuttgart 1934-1954) referred to and observed "the occasional flesh-pink or reddish specimens of the imago that are taken, and which I had supposed to be influenced by moisture, are now believed to be a natural aberration, perhaps inheritable; attempts should be made to breed from it." Reference to the unpublished manuscript by A. L. Goodson & D. K. Read (*Aberrational & Subspecific Forms of British Lepidoptera,*

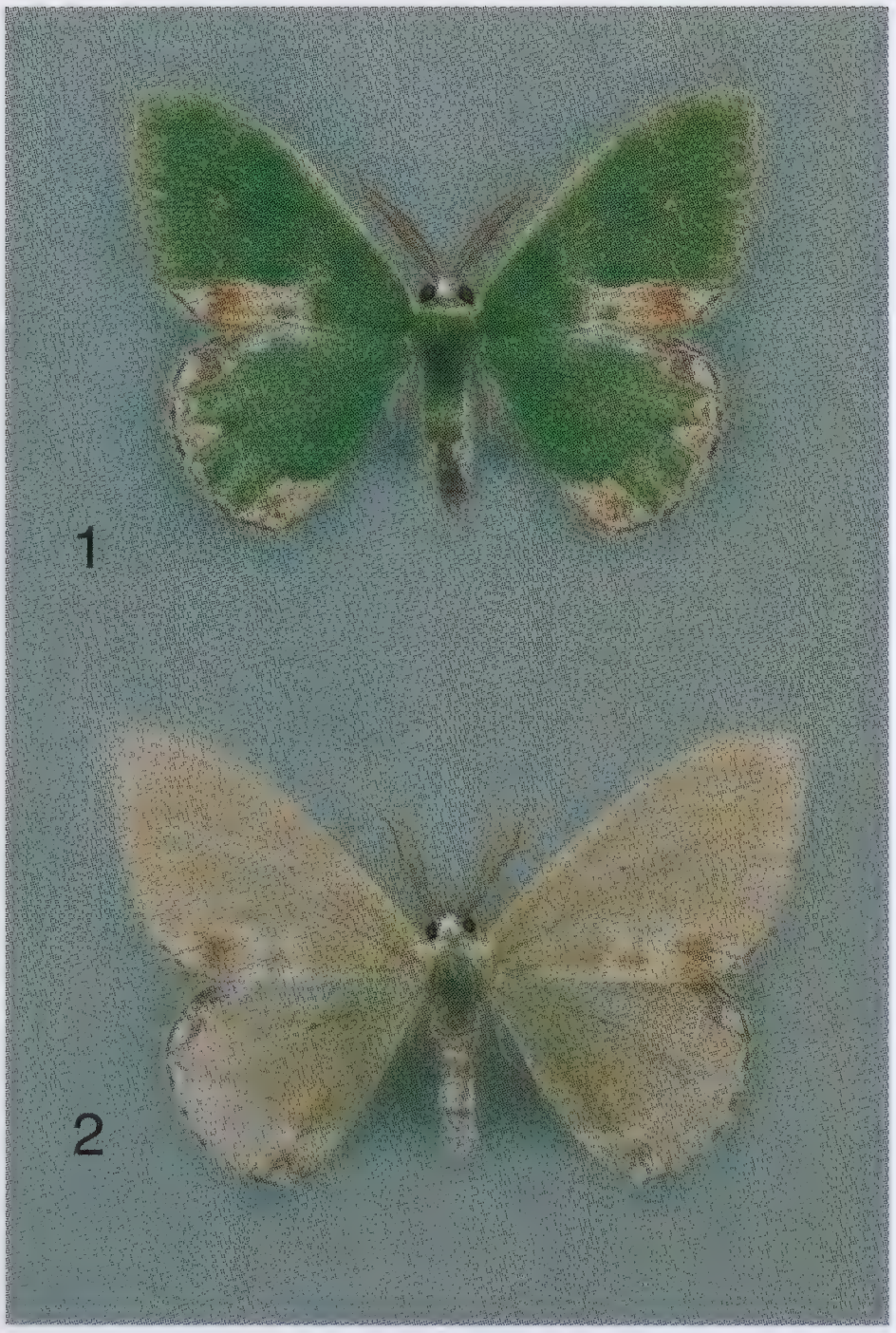

Plate 1. *Comibaena bajularia* (D. & S.) Blotched Emerald (Lep.: Geometridae), Blythburgh, Suffolk.

1. Typical example, male, 9.vii.2013;

2. ab. *rosea* Cockayne, male, 20.vii.2013.

Vol. 10 pt. 1. Geometridae), reveals reference to ab. *rosea* Cockayne (1952. *Ent. Rec.* **65**: 66). Cockayne describes the ab. *rosea* thus – "The green ground colour is replaced by pink. Type female: New Forest, 1907, C. Gulliver. (Bright coll.) Rothschild coll. This form has been bred and the change of colour is not caused by damp or exposure to light.". However, Cockayne did not illustrate the ab., as the plate III (described as "Plate IV") was purely half-tone, greys, and the whole point of the subtle shift of green to pink would have been lost.

As I cannot find an illustration of this aberration, which probably occurs from time to time, in the British literature I include one here. I wonder how many lepidopterists have followed Prout's suggestion made in 1938 to breed this form?

My thanks to Martin Honey (Natural History Museum, London) for his comments and for comparing my images against Cockayne's original specimens in the National Collection.

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Exceptional catches of Heart and Dart *Agrotis exclamationis* (L.) (Lep: Noctuidae) in Devon in 1970

In the summers of 1970 and 1972 I ran a 125-watt Robinson MV light-trap almost nightly from dusk to dawn in a garden on the edge of Tavistock, Devon (O. S. grid reference SX 489737; altitude approx. 155 metres = 500 feet). The mature garden was about one acre in extent and bordered onto Whitchurch Down, a pony-grazed moorland on the edge of Dartmoor. I identified and counted all species of macro-moth and released the catch at dusk, except for those needing confirmation of identity which were killed and set.

In summer 1970 the trap caught exceptionally large numbers of Heart and Dart *Agrotis exclamationis* (L.). The periods with the largest nightly catches are shown in Table 1, which also shows catches in 1972 when numbers had returned to normal. Numbers of Heart and Darts exceeded a thousand on 18 nights between 18 June and 8 July 1970. On some nights the numbers of Heart and Dart were more than ten times the total of all other species combined; for example, on 24 June 1970 there were 4,326 Heart and Darts and 324 individuals of 41 other moth species. The first and last dates on which the species was caught were 2 June - 10 August 1970 and 24 June - 21 August 1972. The largest catches of Heart and Dart were in late June in 1970 but early August in 1972.

Common species such as Large Yellow Underwing *Noctua pronuba* L. and Dark Arches *Apamea monoglypha* (Hufn.) were also more abundant in 1970 than in 1972, but not in the superabundance of Heart and Dart. Table 2 shows numbers of all those species for which the greatest nightly catch exceeded 100 in either year, namely the three species already mentioned together with Flame *Axylia putris* (L.), True Lover's Knot *Lycophotia porphyria* ([D. & S.]), Dot *Melanchra persicariae* (L.) and Common

Date in	1970	1972
13.vi	766	5
14.vi	600	6
15.vi	827	5
16.vi	527	2
17.vi	2921	7
18.vi	2201	4
19.vi	3578	2
20.vi	1737	13
21.vi	1605	12
22.vi	910	7
23.vi	**4326**	15
24.vi	3773	18
25.vi	1555	10
26.vi	2929	14
27.vi	2079	0
28.vi	3408	4
29.vi	1749	2
30.vi	1755	25
1.vii	858	20
2.vii	1175	27
3.vii	787	30
4.vii	1843	34
5.vii	1156	8
6.vii	1431	35
7.vii	1975	40
8.vii	919	34
9.vii	139	18
10.vii	578	17
11.vii	664	15
12.vii	588	70
25.vii	71	10
26.vii	123	10
27.vii	67	11
28.vii	47	29
29.vii	11	17
30.vii	12	32
31.vii	20	35
1.viii	4	67
2.viii	19	29
3.viii	11	55
4.viii	16	**85**
5.viii	no trap	60
6.viii	2	44
7.viii	4	8
8.viii	1	61
9.viii	3	18
10.viii	3	21

Table 1. Numbers of Heart and Dart *Agrotis exclamationis* caught by mv-trap at Tavistock, Devon. Periods selected to show large numbers in 1970 and later peak in 1972.

Item	Year	Heart & Dart	Flame	Large Yellow Underwing	True Lover's Knot	Dot	Dark Arches	Common Rustic	Elephant Hawk
Largest nightly catch	1970	4,326	101	1,660	13	115	316	266	67
	1972	85	39	200	137	80	96	41	25
Total for year	1970	51,086	1,028	7,257	97	1,296	2,573	1,475	779
	1972	2,322	210	3,807	513	630	1,822	389	264

Table 2. Robinson mv light-trap catches At Tavistock, Devon, in 1970 and 1972.

Rustic *Mesapamea secalis* (L.). I also give the numbers of Elephant Hawk Moth *Deilephila elpenor* (L.), simply because I have never caught such numbers of this attractive species anywhere else. Unlike the other seven species, True Lover's Knot was more numerous in 1972 than in 1970.

The annual totals in Table 2 will contain some individuals trapped on more than one night because the catch was always released locally at dusk. An earlier mark-and-recapture study of ten moth species suggested that, under such conditions, the apparent annual totals of resident species such as these should be reduced by between 9 and 26% to arrive at the true number of individuals caught (Craik 1979. *Entomologist's Gazette* **30**: 115-124).

I operated the same trap and kept nightly records in Caernarvonshire (1973 – 1976), Hampshire (1976 – 1979) and Argyll (1980 – 1990), but I never again recorded over a thousand moths of one species in a single night. In all four counties, however, nightly catches of abundant species like Large Yellow Underwing and Dark Arches often numbered several hundred.

Numbers of many moth species are believed to have decreased in recent decades over much of Britain (Fox *et al*. 2013. *The state of Britain's larger moths 2013*. Butterfly Conservation & Rothamsted Research). Historical nightly counts of several hundred species from these four counties may therefore be valuable, particularly to those investigating long-term changes, and I would be happy to make these records available to anyone interested.

Large though these 1970 Devon catches were, they pale into insignificance when compared with the largest recorded Robinson 125 watt mv trap catch that I know of. "Over 50,000" Setaceous Hebrew Character *Xestia c-nigrum* (L.) were caught "in a single night in Hampshire" (Ford, 1967. *Moths*. New Naturalist Series 2nd edition, page 16. Collins). The fact that this total is inexact suggests that it was not a complete count but rather an estimate, perhaps by proportion from a sample. Counting the above large Devon catches took two hours or more each morning. On this basis, a total count of 50,000 moths of one species would have taken about 24 hours. I would be interested if anyone can provide more details of this Hampshire record.

I am grateful to Andrew Masterman for valued comments on a draft of this note.

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Nothochrysa fulviceps (Stephens) (Neur.: Chrysopidae) at Martlesham Heath, East Suffolk

On the night of 1 August 2013 my 125W mv Robinson Moth Trap was running to take advantage of the warm weather created by a southerly airflow extending from the Mediterranean. The minimum temperature this night was 17°C with little wind giving ideal conditions. Having set up, I abandoned the trap until 06.30 hours the following morning. I found it loaded with moths and many more were on the house and adjacent shed walls. It turned out to be a night that produced the largest number of species identified since my arrival at this address in September 2001.

About an hour later I had completed my preliminary inspection of the site, removed the lamp and trap collar and placed a flat square of clear plastic over the resulting gap to prevent moth escapes. Very soon a few moths were attracted to this plastic surface and amongst them, a strikingly large lacewing with, as luck would have it, a couple of the more regular green lacewings sitting adjacent for comparison. Fortunately, I always have my digital compact camera handy and was able to obtain the image in Plate 1.

I was unable to identify the insect immediately and it was put to one side and lay overlooked in my picture gallery until December when I made contact with our County Lacewing Recorder, Adrian Knowles, whereupon we realized that it was a species of *Nothochrysa*. The bright orange head suggested that this was in fact *Nothochrysa fulviceps*, but this is an extremely rare insect in Britain and so the image was e-mailed to the National Recorder, Colin Plant, for his opinion. Armed with only the photograph, Colin noted that it would have been better if he had been able to see the character of the tarsal claw on the insect itself, but given the overall appearance and an individual wing length of over 20 mm, this could only be confirmed as *N. fulviceps*.

Nothochrysa fulviceps appears to be a rare insect in Britain. Plant (1994. *Provisional Atlas of the Neuroptera, Megaloptera, Raphidioptera and Mecoptera of the British Isles*. Huntingdon, Institute of Terrestrial Ecology) noted that there had been no reports in the British Isles since 1958. Since then, it has been recorded in Cumberland (VC 70) on 6 June 1995 by S. M. Hewitt and in South Northumberland (VC 67) on 27 June 2000 by H. T. Eale. The national database records a total of 15 British Isles records, all from England (Colin Plant, personal communication, March 2014).

The origin of the 2013 insect is unclear. Martlesham Heath is a village on the east side of Ipswich, approximately three miles from the River Deben to the east, four miles from the River Orwell to the south and eight miles from the North Sea (O.S. Grid Reference TM 237446; Vice-County 25 – East Suffolk). Much of the surrounding land is occupied by a nationally important area of lowland heath most of which is designated as a Site of Special Scientific Interest. Interestingly however, although there had been no recognised immigrant moths in the trap, there were eight species that had wandered from local wetlands or maybe from the coast, indicating a night of

Plate 1. *Nothochrysa fulviceps* (Stephens), Martlesham Heath, East Suffolk, 1.viii.2013, photograph © Steve Goddard

internal movement and maybe, therefore, immigration in the south-east. The unusual weather pattern of the year 2013 is also worth bearing in mind when interpreting unexpected records such as this.

My thanks go to Adrian Knowles and Colin Plant for identification of the specimen, background information on the species and for helpful comments on this Note.

STEVE GODDARD

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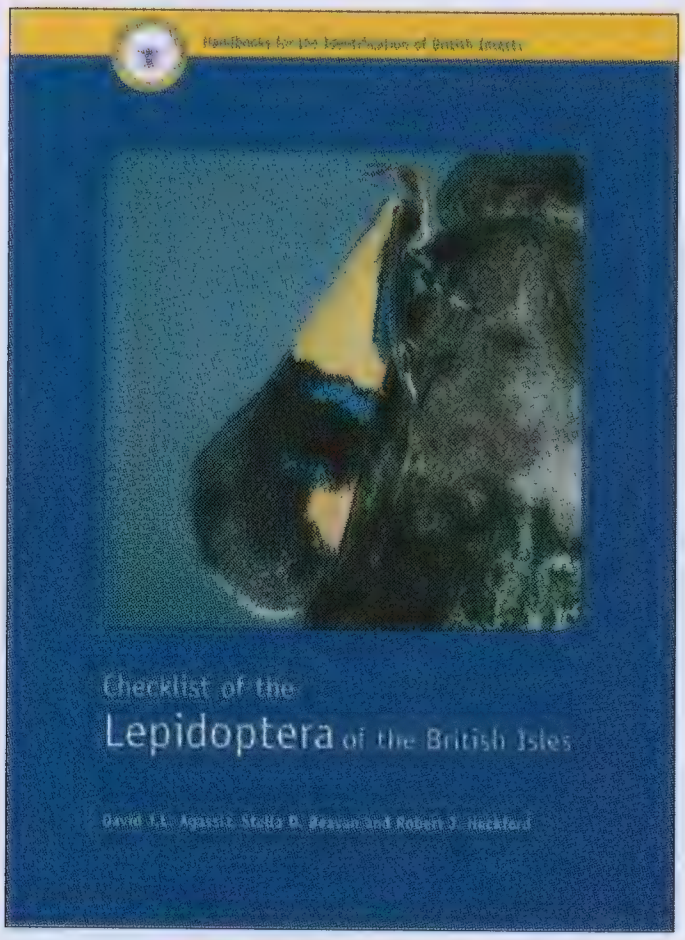
BOOK REVIEW

Checklist of the Lepidoptera of the British Isles **by David J. L. Agassiz, Stella D. Beavan and Robert J. Heckford**. 206pp, 297 x 210 mm (A4), paperback ISBN 978 0 901546 96 8. Published for the Royal Entomological Society as part of their *Handbooks for the Identification of British* Insects series, by the Field Studies Council, December 2012. £25 plus postage from the FSC at Unit C1, Stafford Park 15, Telford TF2 3BB.



The long threatened revised checklist of British Lepidoptera is finally with us. No longer can we put off applying those unfamiliar "foreign" names to "our" moths.

In geographical terms, this much-needed list covers all of the British Isles. The authors have also included the Channel Islands. To get around this politically correct inclusion of French moths, the checklist shows distribution in five columns – England, Scotland, Wales, Ireland and the Channel Islands. These and other columns are explained at the head of the list, apart from the final column, labelled status, for which the explanation of symbols needs to be carefully searched for in the introductory text.

This review necessarily covers two areas – first the actual content of the work and second the way in which it is presented. Reviewing the former has been something of a challenge, since there is almost nothing to fault. The prominently-placed disclaimer within the 2012 Coleoptera checklist from a different publishing stable that "*Within the meaning of Article 8.2 of the International Code for Zoological Nomenclature, this work is not issued for the purpose of zoological nomenclature*" is absent from this Lepidoptera work and so we are left to assume that the present work perhaps is? I detect in a few places a rather heavy reliance upon the recently published Danish Checklist (Karsholt & Nielsen, 2013. *Revideret fortegnelse over Danmarks Sommerfugle*), which itself appears to rely heavily upon information to be found on the Fauna Europaea website. Thus, for example, whilst I wholly agree with the treatment of *Schrankia intermedialis* Reid as a hybrid of *S. costaetrigalis* (Stephens) and *S. taenialis* (Hb.) parents, the citation of a German paper published in 2011 and used as the source for the Danish list overlooks the original work by Anderson *at al.* (2007. *Molecular Ecology Notes* **7**: 374 – 376) which was even summarised in the pages of *this* journal by Gould (2007. *Entomologist's Rec. J. Var.* **119**: 113-114). This might be misinterpreted by the cynical as implying that the present authors have no opinion of their own. With this in mind, I note a number of discrepancies between the lists on the Fauna Europaea website and the list of Noctuoidea published by Yela, Zilli, Varga, Ronkay & Ronkay (*Checklist of the quadrifid Noctuoidea of Europe*. In Witt & Ronkay, Eds., 2011. *Noctuidae Europaeae, volume 13*. Entomological Press). Whilst these differences are in no way the work of our own checklist authors, it would have been nice to know why, for example, they consider that we have *Aporophyla lutulenta* (D.& S.) and *Aporophyla lueneburgensis* (Freyer) as two distinct species. Mention *is* made of the fact that some authors regard them as one, but no reason is given for the

decision made; the distributional conflict of the two taxa, as presented in map form within volume 5 of *Noctuidae Europaea* does not seem to be taken account of. The acceptance of generic names recently introduced by the French lepidopterist Patrice Leraut appears random with, for example, the pyralid genera *Moitrelia* and *Delplanqueia* accepted, but *Matilella* rejected in favour of the more familiar *Pyla* Grote. These decisions may be valid, but no reason or source is given.

What will cause greatest confusion, is the altered sequence of families and species. With 74 listed families, some will be confused to find that the Cossidae appear at position 50, after the Tortricidae at 49 but well before the Pyralidae and Crambidae at 62 and 63 respectively. Notodontidae survive as a separate entity of the Noctuoidea, but treating arctiids as a subfamily of the Erebidae, sandwiched between the "snouts" and the "fan-foots", which are no longer noctuids, is going to take some getting used to by anyone whose interests have been confined to the British Isles. Almost all computer recording programs rely to some extent on the original Bradley and Fletcher numbers as amended and added to in the literature. This system is rendered obsolete by the altered sequence of species. The new system, introduced in this revised checklist, numbers each genus and then each species within each genus. This sounds sensible, though it breaks down the moment anyone undertakes a taxonomic revision and adding or altering still seems likely to require the suffixing of an "a", "b" or "c" (for example, 73.113a)? Or should we treat it as a decimal system, adding numbers 1 to 9 after the existing (for the same new species, 73.1131)? The very brief introductory text appears not to instruct us in this important matter. Either way, "there goes a 73.113" just does not roll of the tongue as easily as "there goes a two three oh six". Original Bradley & Fletcher numbers are included, but this might still confuse some people and on page 21 at 28.008 the old number should read 642a and not 624a.

The value of English names can be debated endlessly; I can find only one error – the English name applied to 37.034 (517a) is not correct and it should be applied to 37.035 (517). This type of mistake might matter since existing correct records, sent to county recorders by "experts", could be auto-converted to incorrect names when, eventually, the popular software switches to the new names. In the same computer context, the only real "error" in the list is that the clearwing genus *Pyropteron* is incorrectly spelled (as *Pryopteron*) both in list and in index.

Overall, however, this is a superb piece of work that has clearly involved the authors in a colossal amount of research and I should make it clear that whilst it is the reviewers task to criticise without fear or favour, none of the criticisms so far are anything other than extremely minor. The three authors are to be wholeheartedly congratulated for their splendid efforts.

Now I turn to the physical presentation of the work. Familiarity is said to breed contempt, but I reckon the reverse is true with the British moth checklist. I like the familiar *Bradley list* (year 2000 version), with its well laid out pages and easy-on-the-eye typeface. I don't like the layout of the new list at all, but I seek solace in that my criticisms cannot be directed at the authors; they are more properly aimed at the publishers. The page-making has clearly not been done by a professional type-setter. Widows and orphans are liberally presented (for example, page 85 ends with "HEMITHEINI" and we then have to turn the page to read the generic name "HEMITHEA"); the printed area of the page has not been set and as a result is variable throughout (e.g., page 112 prints a line lower than page 113, and the column headers (black spots with numbers inside) do not line up across the pages 112 and 113. The running header repeats authors' names and book title – information that would, perhaps, be helpful in a journal containing several different topics but not really required here; the space would have been better used to let the reader know if he or she is reading the main list or one of the Appendices – something that is actually rather tricky! Subfamily, tribe and genus names are all presented in the same font at the same point size and in capital letters, which makes it hard to separate them at a glance. Subgenera are set in italic and in some cases may be a point size smaller, but the font used means that sometimes a second look is still needed; for example, on page 73 I had to

look carefully to deduce that "*Calothysanis*" is a subgenus of *Scopula* and not a full genus. Perhaps I just need to put my glasses on? It may have been better had these been indented; there would not be any possible confusion with generic level synonyms because none are included. Overall, I think the freedom of space afforded by adopting an A4 format has contributed to these problems; the space has been poorly used and I am pretty sure in my own mind that it would have been better to stick to the smaller page size that is already a standard for the keys in the Royal Entomological Society's new series of *Handbooks* which bear the same external livery. All these things do not detract from the science within the pages, but they are "schoolboy errors" on the part of the Field Studies Council that present a lack of professionalism.

Ignoring these issues, this is an outstanding and long overdue piece of work that provides a critical new baseline for Lepidoptera research in the British Isles and finally harmonises this insular zone with the rest of the world, with whom we are now primed to catch up!

I am led to believe that an electronic version of the checklist is to be made available for computer use, but still I wonder whose bright idea it was to print only 400 copies? I did not receive the review copy until well into 2014 because, I am advised, the work had completely sold out within two weeks of publication and had to be reprinted in January.

COLIN W. PLANT

ANNOUNCEMENT

AES ANNUAL MEMBERS' DAY AND AGM 2014

The Members' Day and AGM will take place on Saturday 3 May 2014 at the Haslemere Educational Museum, 78 High Street, Haslemere, Surrey GU27 2LA. The activities will include talks and museum tours in the afternoon, preceded by a brief AGM at midday. Enquiries can be directed to the AES Secretary, PO Box 8774, London SW7 5ZG (*secretary@amentsoc.org*). The 2014 Leonard Tesch Lecture will be delivered by Dr Alan Stewart, Senior Lecturer in Ecology at Sussex University and there will be a special talk by entomologist, author and AES Trustee, Paul Brock. A detailed agenda is available at *http://www.amentsoc.org/events/ listings/0709/*. This year, we are open to allocate time for members (including Bug Club members) to make short presentations. The Secretary will need to hear from any members wishing to contribute in this way by 6 April, if possible, please.

The AGM Agenda, together with the Annual Report to Members, is available on the Society's website and will also be available in paper form at the AGM. The Annual Report to Members as ratified at the meeting will be subsequently published in the June issue of the *AES Bulletin*. A summary version of this Annual Report is submitted to the Charity Commission each year, along with the Treasurer's annual return, and these can be viewed on the Commission's website.

Mr Peter Hodge will retire as AES President at the AGM, and we are pleased to announce that Dr John Muggleton has agreed to accept Council's nomination for AES President for the period April 2014/15. The following Council members, who are due to retire by rotation at the AGM, have expressed their willingness to remain on Council, in their current officer roles, if duly nominated and elected: Dafydd Lewis, Peter May, John Millar. Mr Sven Wair is also standing for election to Council. There remain some vacancies on AES Council; if you would like to nominate anyone (including yourself) please let the Secretary know in advance. If you are unable to attend the AGM but wish to ask a question or to lodge a proxy vote, please contact the Secretary.

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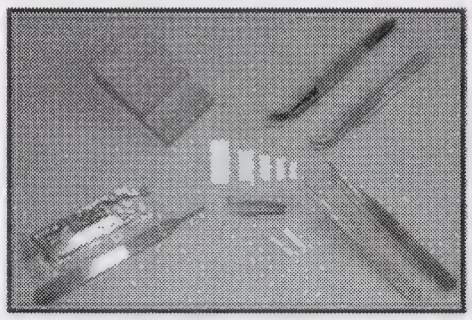

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A few volumes are not currently available; we hope to plug this gap in due course. Barring gaps, current subscribers have full access to all volumes on-line; non-subscribers have access to all but the most recent issues. The journal is produced as paper and the current issue is never available on-line (apart from Contents and Abstracts, as stated above). We have no plans to change this. We consider this to be the fairest way of ensuring the free accessibility of scientific data to all whilst still maintaining a subscription income in order to allow us to publish the journal into the future. Suggestions for improvements should be e-mailed to the Web Manager, please, not to the Editor.

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THE ENTOMOLOGIST'S RECORD
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Please follow the format in this issue; if in doubt, ask the Editor. We positively encourage the use of colour photographs of insects and their habitats but their inclusion must enhance the text or serve some other useful purpose. We encourage the use of colour in the interpretation of graphs, charts etc. All images must be sent as individual separate files; please send high resolution files – do not reduce file size for ease of e-mailing. Images embedded (pasted into) word processor files cannot be used.

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The Entomologist's record is now printed in full colour, enabling us to accept a wider range of illustrative and interpretative material. This development has been made possible by a generous bequest by the late Andy Callow.

Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

BLASTOBASIS MAROCCANELLA AMSEL, 1952 (LEP.: BLASTOBASIDAE) NEW TO THE BRITISH ISLES

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Abstract

Blastobasis maroccanella Amsel, 1952 (Lep,: Blastobasidae), is added to the British list of Lepidoptera. The moth is illustrated in colour; the male genitalia are described, illustrated and compared with those of *B. adustella* Walsingham, 1894 and *B. vittata* (Wollaston, 1858).

Introduction

B. maroccanella is the third additional species of the genus *Blastobasis* to be found new to Britain in the last sixteen years; the others being *B. rebeli* Karsholt & Sinev, 2004, first found in south Hampshire in 1998 (Dickson, 2004) and *B. vittata* (Wollaston, 1858) first found in East Sussex in 2008 (Elliott, 2010).

For the past few years I have been on the look-out for any other members of the genus *Blastobasis* to make an appearance in England; the most likely, I thought, being *B. maroccanella*. I earmarked two possible candidates from among well over a hundred *B.* adustella and about ten *B. vittata* recorded during 2013 from my garden moth-trap in Southsea, Hampshire. During February 2014 I got around to dissecting the two male specimens, one from 25 July 2013 and the other from 11 November 2013, which had aroused my suspicions and was somewhat surprised that both appeared to be *B. maroccanella*. I knew that Martin Corley was familiar with the species from his frequent visits to Portugal so I e-mailed to him some photographs of one of the moths and its genitalia. He kindly compared the photos with his specimens and genitalia slides and informed me that mine was indeed *maroccanella*.

Blastobasis maroccanella Amsel, 1952

Description of imago. (Plate 1, figs 1-2)
Very similar to a small, dark, indistinctly marked *adustella* or *vittata*. Karsholt & Sinev (2004) describe it as being a variable species with a wingspan of 10-17mm and Landry *et al*. (2013) also say that it is variable in size and markings. The following description is from the English specimens, both of which are similar.

Wingspan 12-14 mm. Head, antennae, palpi and thorax of same colour as forewing; labial palpus with segment 3 about one-half length of segment 2, differing from *B. vittata,* in which segment 3 is shorter than half the length of segment 2, and *B. adustella* in which segment 3 is just over one-third of the length of segment 2 (not, as wrongly stated by Karsholt & Sinev, *loc.cit.*), one and a half times as long as segment 2). Forewing overall mottled blackish with small, irregular groups of pale scales; an

indistinct, pale, outwardly oblique dash on dorsum at one-third which is probably the remnant of an angulate fascia as in the description by Karsholt & Sinev (*loc. cit.*). Hindwing pale grey, a little darker toward apex.

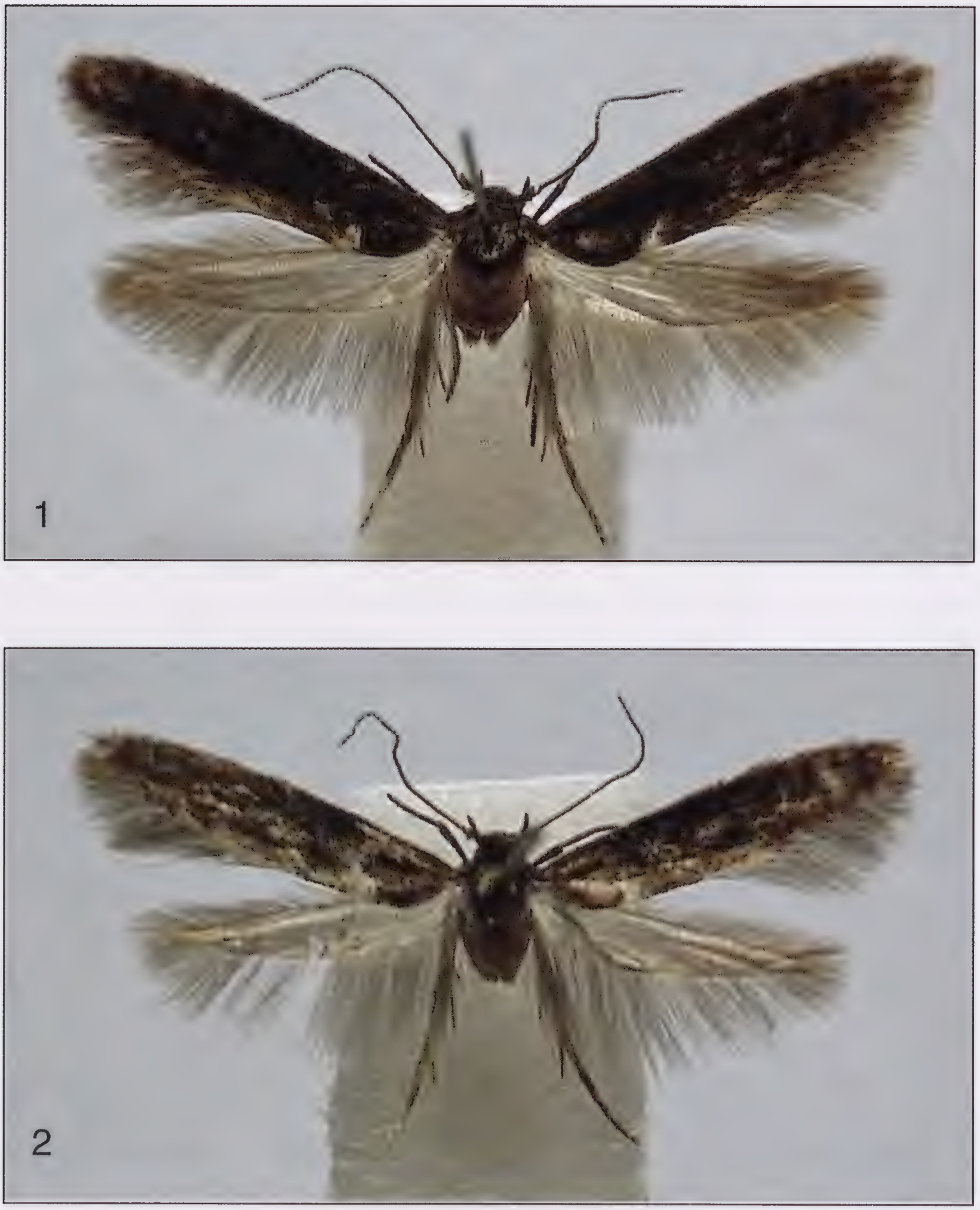


Plate 1. *Blastobasis maroccanella* Amsel, males from Southsea, Hampshire. 1: caught 25.vii.2013; 2: caught 11.xi.2013.

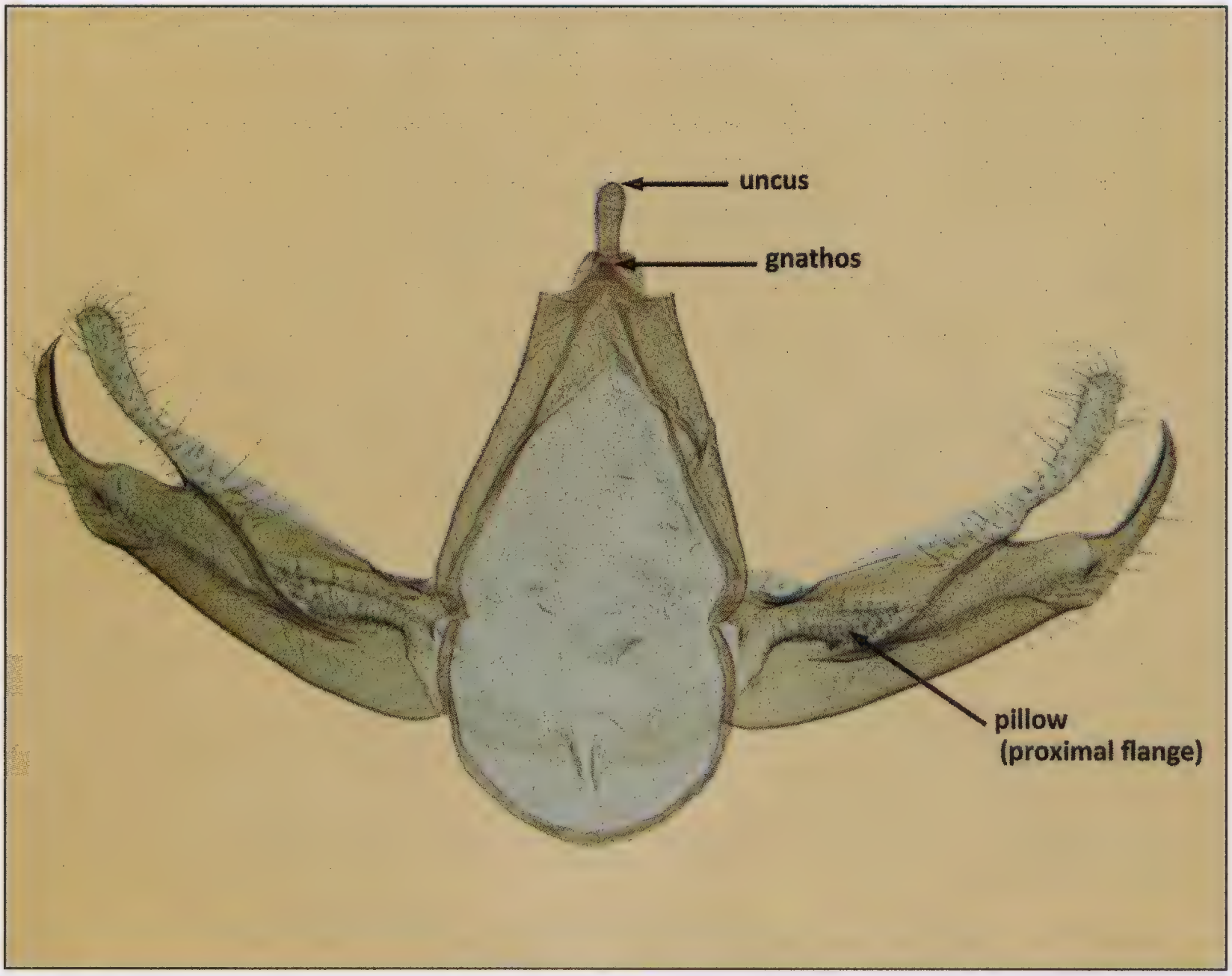


Plate 2. *Blastobasis maroccanella* Amsel. Male genitalia (aedeagus removed).

Male genitalia (Plate 2)

Uncus finger-like, a little broader posteriorly; gnathos with posterior edge of tip flat; sacculus approximately as long as valva, upwardly curved and with pointed apex; basal pillow of valve (referred to as proximal flange in Landry *et al.*(*loc. cit.*) rather narrow, covered with microtrichia and with irregular rows of setae along its posterior and anterior borders; aedeagus gently curved, its outer edge a heavily sclerotized rim, apex with a thick sclerotized area which is pronged into a narrow whip-like curved appendage which may be hidden under the aedeagus in some preparations.

The main differences between *maroccanella, vittata* and *adustella* lie in the gnathos, the 'pillow' at the base of the valva and the aedeagus. In *maroccanella* the posterior edge of the gnathos (Plate 3, Fig. b) is flat, whereas in *vittata* (Plate 3, Fig. d) it has two smoothly rounded humps and in *adustella* (Plate 3, Fig. f) these humps are more pointy. The differences in the pillow at the base of the valva are difficult to describe but can be seen clearly in the photos. In *maroccanella* (Plate 3, Fig. a) it is narrower than in the other two (Plate 3, Figs. c & e) and more densely covered with microtrichia. Furthermore, in *vittata* the valva is narrowed in the middle and is longer than the sacculus. The aedeagus of *vittata* (Plate 4, Fig. b) is more markedly curved than those of *maroccanella* (Plate 3, Fig. a) and *adustella* (Plate 3, Fig. c).

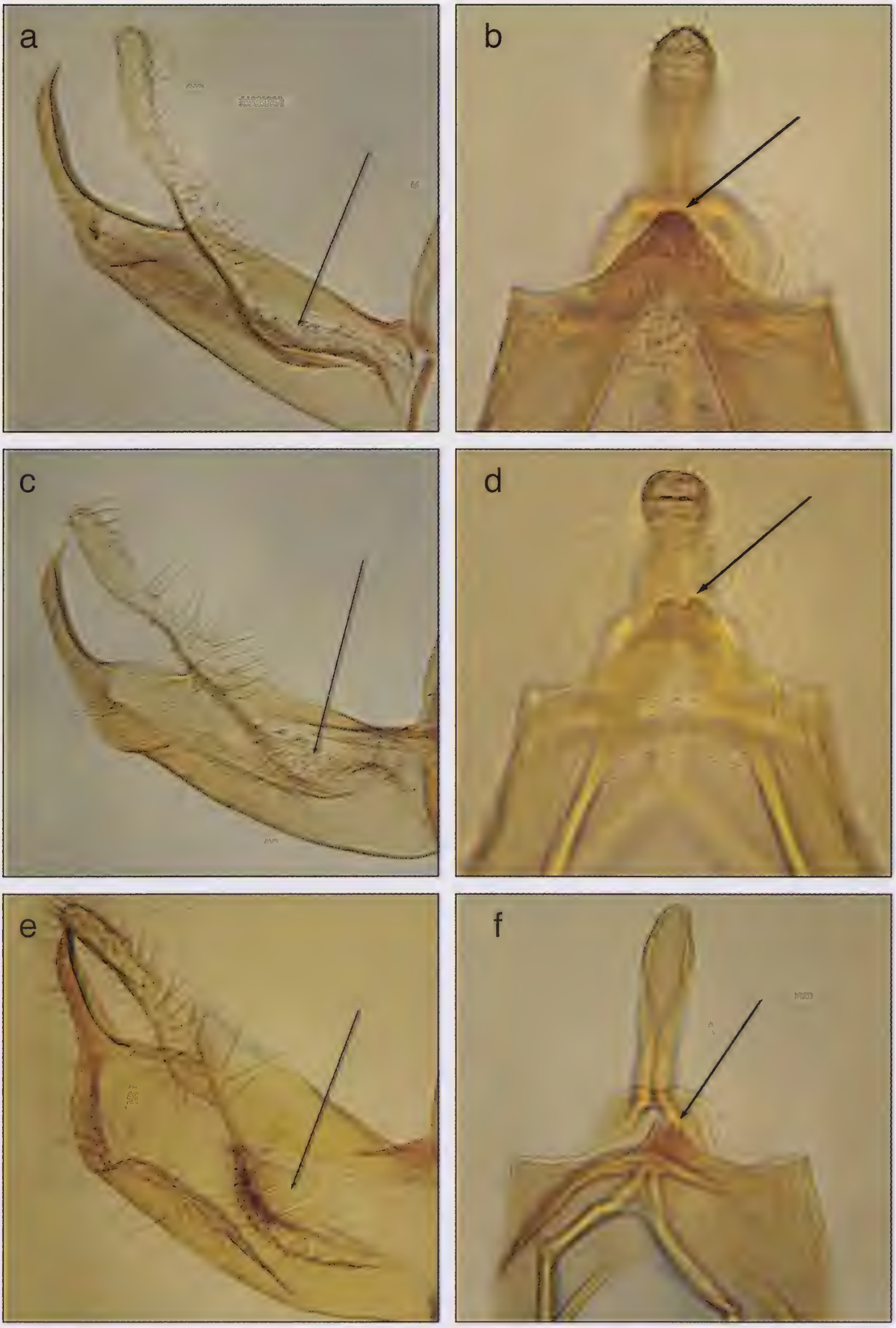


Plate 3. Comparison of male genitalia of some *Blastobasis* species: *B. maroccanella* (top row, Figs. a, b) *B. vittata* (middle row, Figs. c, d) and *B. adustella* (bottom row, Figs. e, f). a, c & e — Left valva & sacculus to show 'pillow'; b, d & f — gnathos.

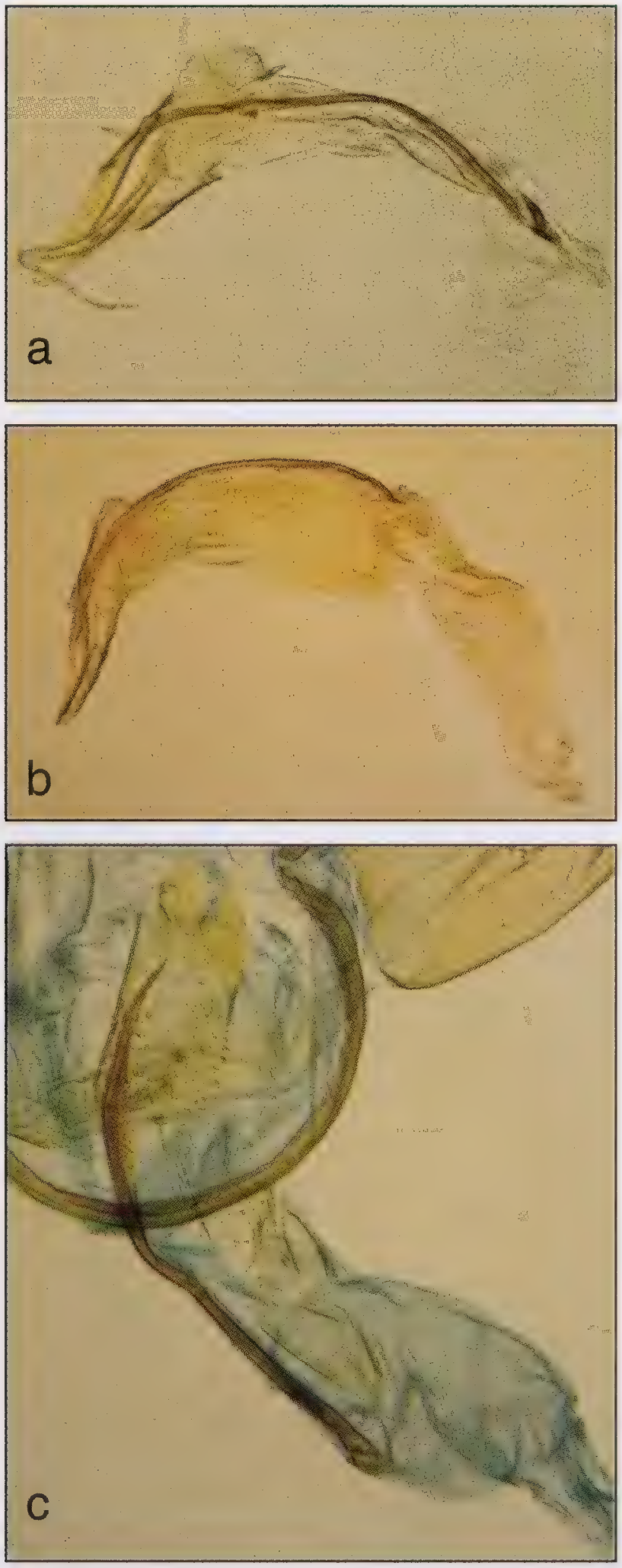
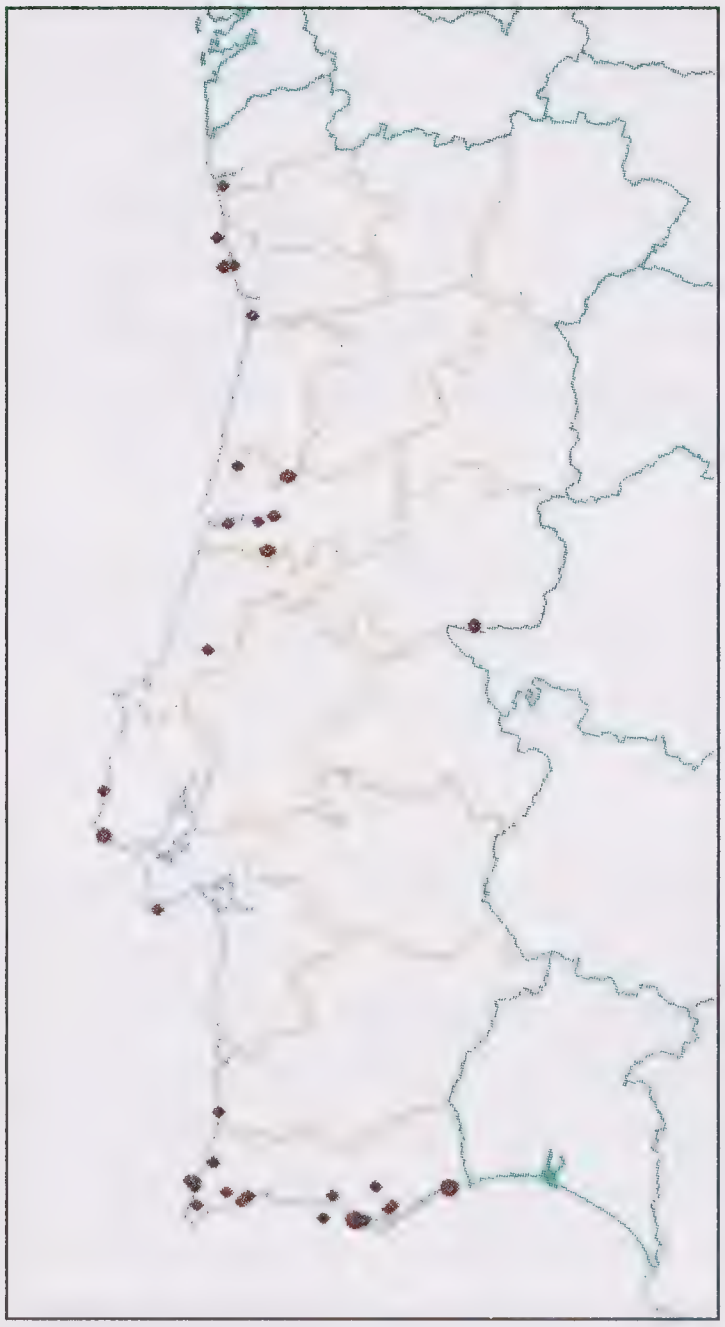


Plate 4. Comparison of aedeagus of *Blastobasis* species.
a. *maroccanella*; b. *vittata*; c. *adustella*.



Map 1. Map of Portugal, showing the distribution of *Blastobasis maroccanella* in that country. The distribution affects low-lying areas near the sea and rarely more than 50 km inland.

Female genitalia

Ovipositor very long; ductus bursae narrow, with one coil in the anterior sclerotized section before corpus bursae which is oval; the single signum is thorn-like with a triangular base. The genitalia are very similar to those of *vittata* and it is considered unsafe to identify a specimen based on the female genitalia characters alone (O. Karsholt *pers. comm.*). The genitalia differ from those of *adustella* by having a much smaller corpus bursae (Karsholt & Sinev, *loc. cit.*).

Biology

According to Karsholt & Sinev (*loc. cit.*) the type series was bred from larvae found in a bunch of grapes, in pods of peas (*Pisum sativum*) and in decaying wood (Amsel, 1952). Larva undescribed.

Distribution

Madeira, Azores, Morocco, Portugal, Spain, and widely distributed throughout Macaronesia and the western Mediterranean (Karsholt & Sinev, *loc. cit.*) and California in the USA (Landry *et al.*2013). The species is found in low-lying areas near the sea, and rarely more than 50 km inland in Portugal as shown in the map (Fig. 1) (M. F. V. Corley, pers. comm.).

Comments

It is quite possible that *B. maroccanella* may have been overlooked in England in the past. It is an undistinguished-looking moth and could easily be passed over as a small, dark *B. adustella* or *vittata*, especially if it is worn.

It is a mystery, probably never to be solved, how the three most recently-arrived species of *Blastobasis* actually got here … but got here they have and there is no reason to believe that they will be the last to come.

In the new checklist, *B. maroccanella* should be placed after *B. vittata* and allocated the number 41.0041.

Acknowledgements

Grateful thanks are due to Martin Corley for confirming my identification of *B. maroccanella* and for supplying the map of its distribution in Portugal; to Richard Dickson and Ole Karsholt for helpful comments and, most especially, to Ian Thirlwell for invaluable and lengthy help with the photography of the genitalia and for proof-reading my text.

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An unusual emergence date and new foodplant for the Small Ranunculus *Hecatera dysodea* (D.& S.) (Lep.: Noctuidae)

The first recorded occurrence of *Hecatera dysodea* on my brother's farm (O. S. grid reference ST 894579) at Steeple Ashton in Wiltshire was larvae on 4 August 2012 and on appropriate dates since. Prickly Lettuce *Lactuca serriola* proliferates around the site and larvae are found on the flowers and seed. In the adjoining garden Wall lettuce *Mycelis muralis* occurs with some frequency, chiefly in the more shady spots, and it was with some surprise that although larvae of *Hecatera dysodea* were found in numbers on the flowers and seed, a search through the literature immediately available to me, and thus admittedly less than comprehensive, suggested that Wall Lettuce was not a previously-recorded larval foodplant.

On 4 September 2013, a fine adult male *Hecatera dysodea* was found in the moth-trap next to a stand of Prickly Lettuce. The second half of 2013 was proving such a remarkably fine season for moths that the thought crossed my mind that as there was still an abundance of flowers and seed on the Prickly lettuce and Wall lettuce that should a female have emerged there would be ample sustenance for a second brood of *Hecatera dysodea*. Regular searches of both foodplants during the next two or three weeks drew a not entirely unexpected blank from which I concluded that the emergence of the adult was no more than one of those freak occurrences which come our way from time to time. However if we accept that changes can come about through evolutionary processes then perhaps one day *Hecatera dysodea* may become double-brooded.

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Toadflax Brocade *Calophasia lunula* (Hufn.) in Peterborough in May and August 2013

Despite what I considered poor catches in mid May 2013 in the Robinson pattern light-trap I operate in my Peterborough garden, I did record a new species for the garden, in which I have been light-trapping since 1991. This was the Toadflax Brocade *Calophasia lunula* (Hufn.). I had two individuals in good condition, on 18 and 20 May, but none on 22 May or thereafter until one on 15 August 2013, also in good condition. This is of particular interest in that these are amongst the first records ever for the Peterborough area and for VC 32 Northamptonshire. There is one previous record on the Moths of Northamptonshire website (*www.northamptonshirewildlife.co.uk/moths/nmothsindex.*htm – accessed March 2014) of a single adult captured at light in a Peterborough garden on 15 August 2010 by Mike Weedon. The "Cambs Moth Gallery" (*http://cammoths.blogspot.com*) reports (March 2014) that the Toadflax Brocade has been recorded in adjacent VC 29 Cambridgeshire in every year from 2010 to 2013, all in the Cambridge garden of Peter Holt. The first records were of two caterpillars on 8 September 2010, feeding on a plant of Purple Toadflax *Linaria purpurea*; these pupated within 48 hours. A third caterpillar was found a few days later; it emerged from the ground below the plant when this was watered. In 2011, Peter captured an adult at light in the garden on 16 May. This is probably the first record of an adult for VC 29 Cambridgeshire. Subsequent posts on the "blogspot" show caterpillars found again on 4 September 2012 and 16 July 2013. On the latter date a total of 15 caterpillars was counted on the Purple Toadflax in this garden.

John Dawson, the County Moth Recorder for Cambridgeshire, has one additional record for the county – of an adult in north-east Cambridge on 10 June 2013, recorded by Adrian Matthews. John adds that after calling to see Peter Holt's first record of the larva on Purple Toadflax in Peter's garden he made a search of the plentiful Common Toadflax *L. vulgaris* in his area of Cambridge, but to no avail. However, on a visit to his mother-in-law a week later in Upminster, Essex, he found six larvae of varying sizes all feeding on Purple Toadflax.

The recent expansion of the distribution of this species, from colonists arriving in south-east England from continental Europe in the 1950s, via localised coastal residency in the south-east to an increase in inland records from about 2000 onwards, can be seen on the national distribution map at the Butterfly Conservation website (*http://butterfly-conservation.org*).

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Chaenomeles japonica (Thunb.) Spach, a new food plant for *Phyllonorycter sorbi* (Frey) (Lep: Gracillariidae)

Phyllonorycter sorbi is known to use various species of Rosaceae in its larval stage. The British leafminers website (*www.leafmines.co.uk*) gives *Sorbus aucuparia*, *S. aria* and *Prunus padus* as the only foodplants known in Britain, while the Dutch site (*www.bladmineerders.nl*) lists a further 10 species and five other genera used in Europe. Here we report *Chaenomeles japonica* as a new food plant for *Phyllonorycter sorbi*.

On 9 December 2012, we visited Lynford Arboretum, West Norfolk (VC 28). Whilst there, IB noticed a bush labelled *Chaenomeles maulei*; searching of it produced several old *Phyllonorycter*-type mines, exhibiting a strongly folded underside blister. At home, a search of the web and use of Stace (1997. *New flora of the British Isles*, 2nd edition), informed us that the plant might be more correctly named *Chaenomeles japonica* f. *maulei*. We also found that no *Phyllonorycter* sp. was known to mine *Chaenomeles japonica* in the UK (*www.leafmines.co.uk*), although that *P. cydoniella* mines this plant in Europe (*www.bladmineerders.nl*).

I communicated this find to Jim Wheeler, who in turn passed it on to Rob Edmunds, who was not immediately sure of the identity of the mine. We returned to Lynford on 28 July 2013 (just in the nick of time as it transpired) and collected three leaves with apparently completed, but unopened, blister mines similar to those previously seen (Plate 1). On 31 July 2013, the first of two adults, a male, emerged; the second, a female, emerged on 4 August. The third mine was subsequently opened to reveal a dead larva. Both moths were photographed live (Plate 2a), then pinned.

The genitalia of both specimens were examined by IB. Comparing these with the diagrams given by Emmet, Watkinson & Wilson (1985. in Heath & Emmet, (Eds.), *The Moths and Butterflies of Great Britain & Ireland.* Harley Books), it was apparent that the male's pair of almost equally long costas, with the right hand one being more or less straight and the left hand one being obviously curved at the tip, indicated that this was *P. sorbi* (Plate 2b).

The female genitalia appeared to match a photo of a female *P. sorbi* given at *www.lepiforum.de/*. IB contacted Rob Edmunds who sought an opinion from David Manning, but neither were convinced of its identity from the male slide, as the aedaegus and the form of the costas were obscured. All details were sent to Jim Wheeler, who sought confirmation from various experts but nobody would commit, at this stage, to this being *Phyllonorycter sorbi*. Examination of the pupal cases was also inconclusive as some features were similar to other rosaceous-feeding species, including *P. blancardella* and *P. oxyacanthella* (Patočka & Turčáni, 2005. *Lepidoptera Pupae: Central European Species* (2 volumes). Apollo Books). The only way forward seemed to be via DNA barcoding. In November 2013, IB contacted Marko Mutanen in Finland who kindly agreed to take the male specimen. In March 2014 the results of barcoding the COI-5P marker were passed on to IB by Marko Mutanen. It showed a 100% match to several specimens of *P. sorbi*, obtained from a range of Rosaceae from

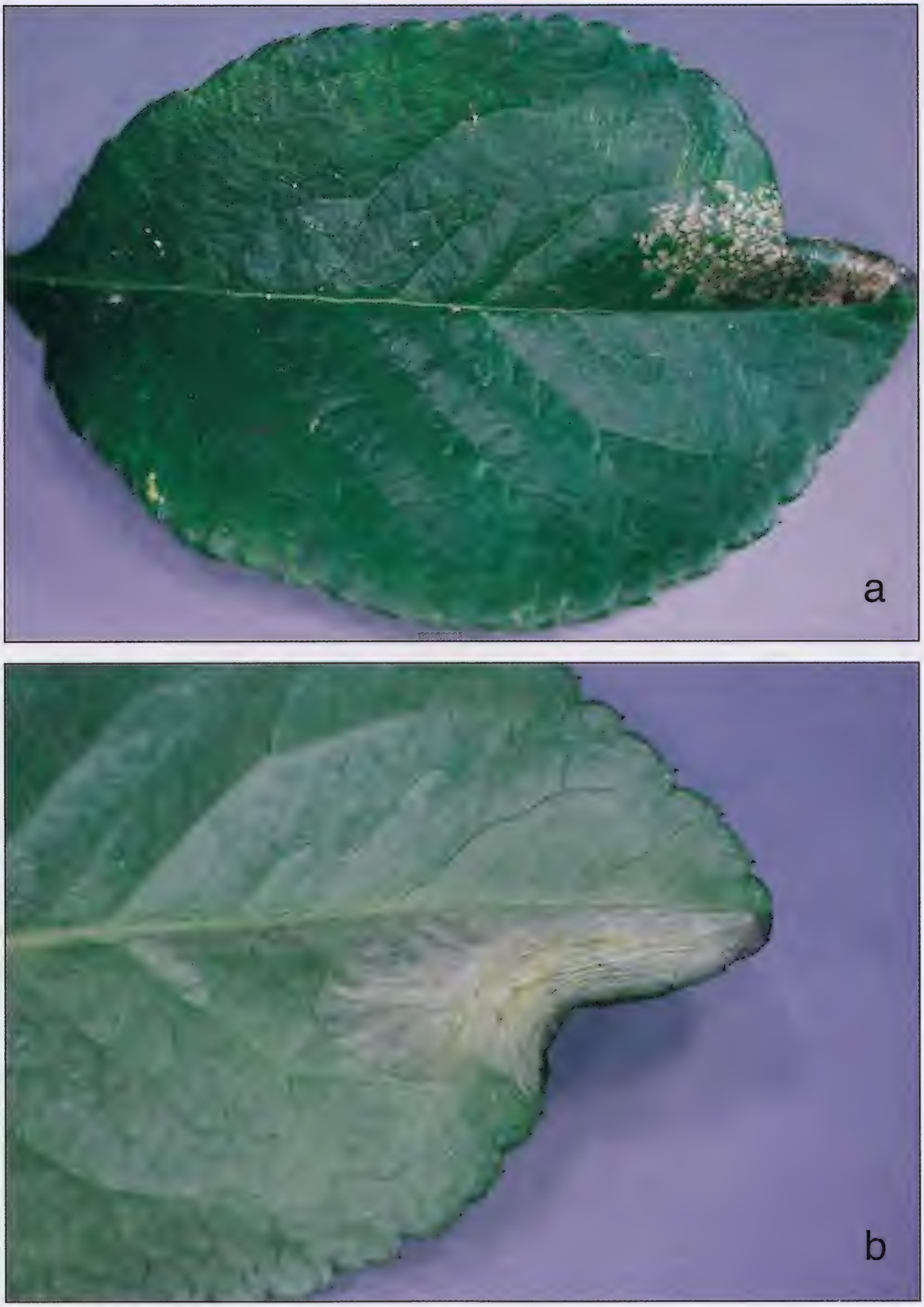

Plate 1. *Phyllonorycter sorbi* (Frey). Larval mine in leaf of *Chaenomeles japonica*, Lynford Arboretum, West Norfolk, 28.vii.2013. a: upperside; b: underside.

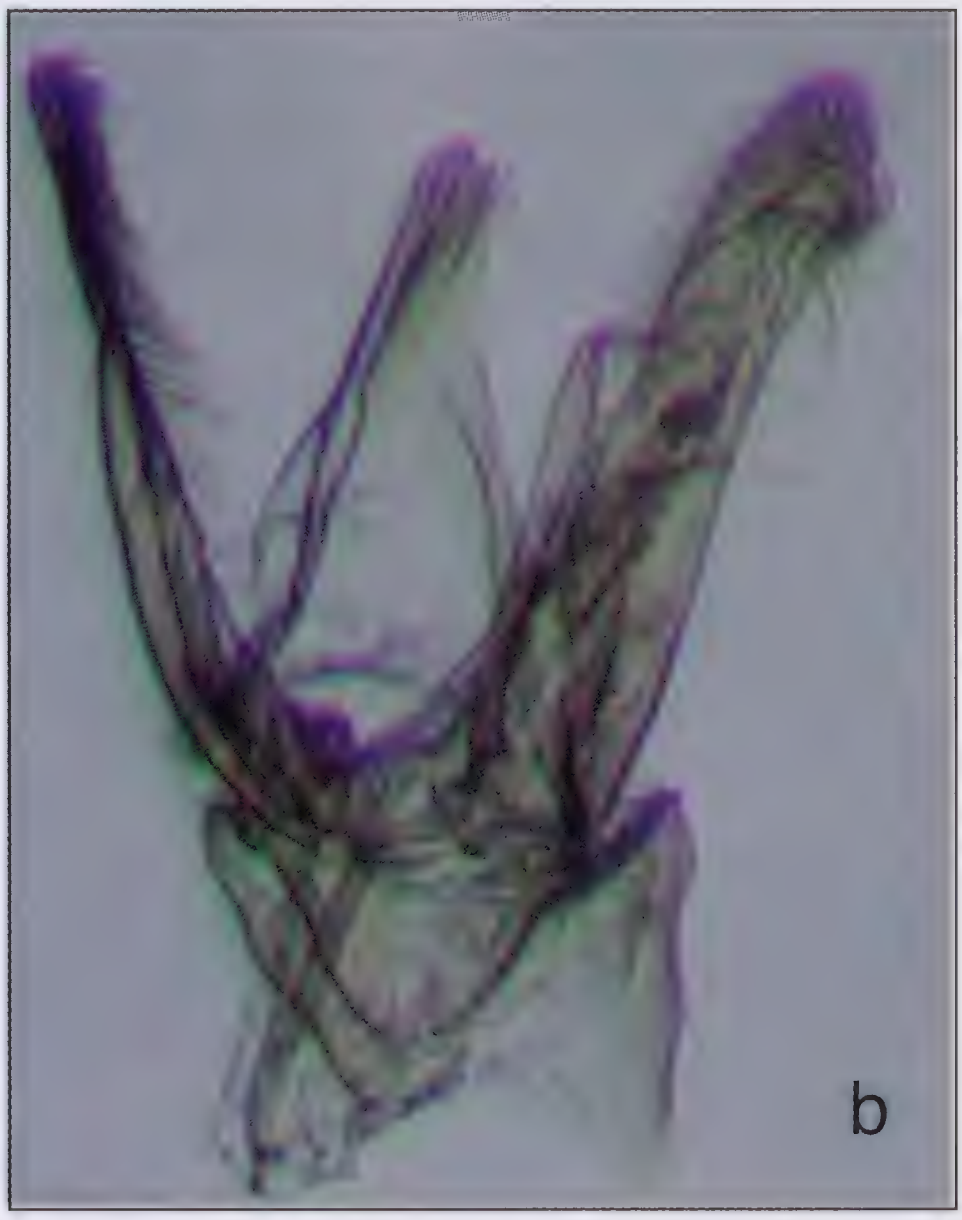

Plate 2. *Phyllonorycter sorbi* (Frey). Male, reared from mine on *Chaenomeles japonica*, Lynford Arboretum, West Norfolk, emerged 31.vii.2013. a: Adult insect; b: genital capsule.

Finland, without a single difference in the nucleotides, confirming the specimen as *P. sorbi* (*pers. comm.* Marko Mutanen).

Lynford Arboretum has several *Sorbus aucuparia* specimens and *Prunus padus* is common, so the use of *Chaenomeles japonica* may be overspill of the *P.sorbi* population using the more usual foodplants. It will be interesting to see if other records of *P. sorbi* using *Chaenomeles japonica* are forthcoming. Given its relatively broad range of foodplants in Europe, it is possible that *P. sorbi* might well be found on other Rosaceous plants in the UK.

Thanks are due to Rob Edmunds, Jim Wheeler, David Manning and Marko Mutanen for their invaluable help in sorting out this issue, and to Rob Edmunds and Marko Mutanen for making suggestions to improve this article.

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Macrochilo cribrumalis (Hb.) (Lep.: Noctuidae), Dotted Fan-foot: the first records for Bedfordshire (VC 30)

A single example of *Macrochilo cribrumalis* was trapped on 13 July 2013 at Clophill by Roger Christopher; the identification was confirmed from a photograph sent at the time. Unfortunately it died before the County Moth Recorders got to see it (my husband and I were on holiday in North Wales at the time), but RC kept the specimen, which was collected at a later date and awaits setting. A second individual turned up in the Rothamsted Insect Survey light trap run at Cockayne Hatley by Ian Woiwod on 17 July 2013; in this case, the identification was confirmed by examination of the genitalia by David Manning, the county's micro-moth Recorder. As far as I am aware these are the first records of *Macrochilo cribrumalis* in VC30.

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ON THE OCCURRENCE OF *NINETA PALLIDA* (SCHNEIDER, 1846) AND *N. INPUNCTATA* (REUTER, 1894) IN THE BRITISH ISLES AND REMARKS ON THESE RARE GREEN LACEWINGS (NEU.: CHRYSOPIDAE)

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Abstract

A third record of the green lacewing *Nineta pallida* (Schneider, 1846) is reported for Britain. A published record of *Nineta inpunctata* (Reuter, 1894) is shown to be an error, leaving only one valid British Isles record for that species. The opportunity is taken to discuss distribution, status and ecology of these two rare lacewings in Britain and France.
Key words. Neuroptera, Chrysopidae, *Nineta pallida*, *Nineta inpunctata*, morphology, distribution, life cycle, univoltinism, photoperiod sensitivity.

Nouvelles données sur la présence de *Nineta pallida* (Schneider, 1846) et de *Nineta inpunctata* (Reuter, 1894) dans les îles britanniques et remarques sur ces rares chrysopes (Neu.: Chrysopidae).

Résumé

Un troisième enregistrement de la chrysope verte *Nineta pallida* (Schneider, 1846) est signalé pour la Grande-Bretagne. Un compte rendu publié de *Nineta inpunctata* (Reuter, 1894) est une erreur, laissant seulement un enregistrement valide pour les îles britanniques de cette espèce. L'occasion est saisie pour discuter de la distribution, du statut et de l'écologie de ces deux chrysopes rares en Grande-Bretagne et en France.
Mots clés. Neuroptera, Chrysopidae, *Nineta pallida*, *Nineta inpunctata*, morphologie, distribution, cycle de vie, univoltinisme, photopériodisme.

Introduction

Members of the green lacewing genus *Nineta* Navás, 1912 are characterized within the Chrysopini by several morphological characters, specifically a rather great size, symmetrical mandibles with small basal tooth on each, head immaculate or only marked with small red spots (at least in West Palaearctic species), abdominal sternites 8 and 9 separate and very distinctive male external genitalia with elongate ectoprocts and upturned tip of sternite 9 (Brooks & Barnard, 1990). Two species are widespread and common throughout Great Britain and, although records are sparse, appear likely to be widespread in Ireland (Plant, 1994). Both species are associated with a range of deciduous trees: *N. vittata* (Wesmael, 1841) and *N. flava* (Scopoli, 1763) (see

Killington, 1936; Frazer, 1959; Plant, 1994, 1997). They are easy to distinguish from each other and are familiar to British entomologists. Two other *Nineta* species are much more rare and known from few specimens. *Nineta inpunctata* (Reuter, 1894) is known with certainty from only one example (see Plant, 1996); a more recent report (Plant & Shortall, 2012), is now known to be a misidentification of *Nineta pallida* (Schneider, 1846) which was added to the British fauna by Harvey & Plant (2007). A recent capture of a third example of *N. pallida* strengthens its occurrence in Britain and gives us the opportunity to clarify some elements of morphology, biological characters and European distribution.

British Isles records of *Nineta inpunctata* and *N. pallida*

There is a single reliable record of *N. inpunctata* in Britain, a female from Eastend Wood at Elsenham, North Essex, 26 June 1989, leg. & det. C. W. Plant (Plant, 1996). The identification was confirmed by the late Herbert Hölzel (Brückl, Austria). This site is approximately 200 metres from the south-eastern end of the main runway at Stansted Airport. The report of *Nineta inpunctata* from Suffolk given in Plant & Shortall (2012) is now known to be a misidentification of *N. pallida* and stems from a mistranslation of a critical couplet in the French key provided by Canard, Cloupeau & Leraut (1998).

Nineta pallida was added to the British list by Harvey & Plant (2007) who reported a female captured by Martin Harvey at Wendover Woods, Buckinghamshire on 23 September 2006. A second example came to a 12.2 metres tall suction trap, operated by the Rothamsted Insect Survey at Brooms Barn, near Bury St Edmunds, West Suffolk, on 23 September 2012; this was erroneously reported as *Nineta inpunctata* by Plant & Shortall (2012) – a mistake that can be directly attributed to a mistranslation of the French identification key.

A third British example is now reported for the first time – a single female was taken at twin-30 watt actinic light at Westcott, Buckinghamshire on 2 October 2013, leg. D. Wilton (Plate 1).

Morphological discrimination of adults

Males

The male genitalia of *Nineta* species are unambiguously different and provide ready identification. Drawings produced by MC, first published in Canard *et al.,* (1998) are repeated here (Fig. 1).

Females

The females are much less easily distinguished and we therefore give below some characters of gross morphology that are of value in the separation of these two, based upon the detailed description of *inpunctata* (Tjeder, 1938) and on characters visible in our images in Plate 1 & 2.

Plate 1. *Nineta pallida* (Schneider, 1846). Westcott, Buckinghamshire, 2.x.2013, leg. D. Wilton. In collection C. W. Plant. Photograph © Dave Wilton

Plate 2. *Nineta inpunctata* (Reuter, 1894). Montrigaud, Drôme, France, (45° 13' N : 05° 07' W), 23.v.2008. Photograph © Jean-Michel Faton
www.galerie-insect.org/galerie, Le Monde des Insectes.

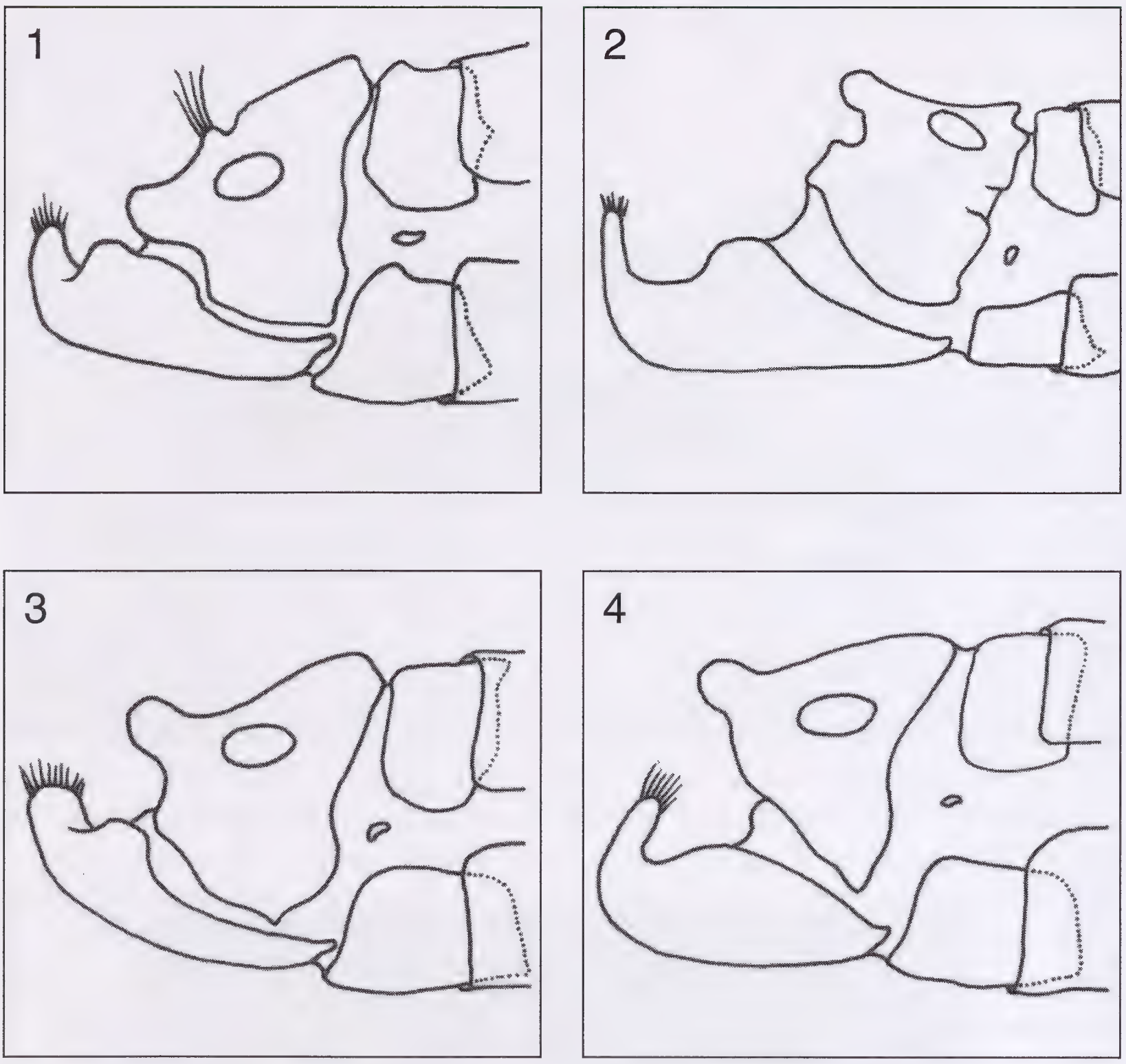

Fig. 1. Lateral view (insect with head to right) of the male terminalia of British Isles *Nineta* species.1. *N pallida* ; 2. N. inpunctata ; 3. N. flava ; 4. N. vittata. All drawings © Michel Canard.

Correction to a previously published key

The most recent identification keys to British lacewings are those by Plant (1997). A revision of these as they affect *Nineta* was presented by Plant in Harvey & Plant (2007), but as a consequence of mistranslation, this introduces a confusion over the colour of the pseudo-median vein ; using these revised couplets, specimens of *N. pallida* will key out as *N. inpunctata*. A correction is therefore required. The following key couplets completely replace all earlier British keys to *Nineta* species; the couplet numbering follows and modifies that given by Plant (1997).

15	Antennal scape (the large basal segment of the antenna) twice as long as wide (usually obvious to the unaided eye).	... *N. vittata*
–	Antennal scape only slightly longer than wide or more or less square	... 16
16	Forewing length 16 mm or greater (but read note 1). Costal margin of forewing straight, convex or concave.	... 17

–	Forewing length less than 16 mm (but read note 1). Costal margin of forewing straight or convex, but never concave.Not *Nineta*	... 18
17	Costal margin of forewing concave (Fig. 106 in original key). This character may be less obvious in females, and it is recommended that a straight edge be placed along the costa to aid interpretation	.... 17a
–	Costal margin of forewing not concave – straight or convex	... 17b
17a	Costal cross-veins of forewings more or less entirely pale, rarely darkened. Cilia in the basal fifth (nearest the body) pale and relatively long and thin, at least as long as the width of the costa and sometimes longer than this width. Hairs on the front face of the front coxae pale, long and fine	... *N. flava*
–	Costal cross-veins of forewings more or less entirely darkened or at least darkened at the ends. ***Non-British species requiring confirmation if recorded here***	... *N. guadarramensis* and *N. principiae*
17b	Pseudo-median vein of forewing black (or at least darkened compared to the cross-veins). Costal cross veins of forewings green. Upper surface of thorax with yellow/green stripe flanked on each side by reddish-brown bands (note that colours may fade, especially in alcohol)	... *N. pallida*
–	Pseudo-median and other long veins of forewings (radial sector and pseudo-cubital) green. Upper surface of thorax green and yellow – never with reddish brown markings	... 17c
17c	All cross-veins black or nearly so. In the forewing, the radial sector and the distal "zig-zag" section of the pseudo-median vein (the inner gradate veins) converge towards the wing tip (Fig. 3). Cilia in the basal fifth of the costa of the forewing black, short and stout, scarcely longer than the width of the costa. Hairs on the front face of the front coxae short, stout and black	... *N. inpunctata*
–	At least the costal cross veins of forewings green – not darkened. In the forewing, the radial sector and the distal "zig-zag" section of the pseudo-median vein do not converge, but run more or less parallel to each other all the way to the wing tip. ***Non-British species requiring confirmation if recorded here***	... *N. carinthiaca*

Note 1 : The wing length character is designed to identify British *Nineta* species only, though it also works for other species currently known from Western Europe. In a wider geographical sphere, the forewings of *Pseudomallada marianus* (Navás, 1905) are 16 mm long, those of *Ps. abdominalis* (Brauer, 1856) reach 18 mm. The female of *Chrysopa gibeauxi* (Leraut, 1989) has a span up to 45 mm. Conversely, *Nineta afghanica* Hölzel, 1982 (16 mm) and *N. pomacea* Zakharenko, 1983 (14.5 mm) are smaller species. In all cases of doubt the taxonomic character of relevance is the symetrical nature of the two mandibles of *Nineta* species, which is shared only by *Chrysotropia* Navás, 1911.

Bio-ecology of *Nineta* spp.

Nineta pallida is strictly associated with conifers of the genus *Abies* (Silver Firs) and *Picea* (Spruce). In Hungary, it appears to be confined to *Picea* (Popov, 2002) and in Slovakia it is a component of the canopy fauna (Szentkirályi & Krištín, 2002). Its life cycle as observed in the Pyrenées mountains in the south of France is univoltine

Plate 3. Eggs of *Nineta pallida* on needle of *Picea* sp.

Photograph © Anne Grimal

Plate 4. Third instar larva of *Nineta pallida*. Föret de Saint-Barthelemy, Montségur, Ariège, France. 42 ° 47' N 01° 48 ' E, altitude about 1700 m asl, July 1984.

Photograph ©Anne Grimal

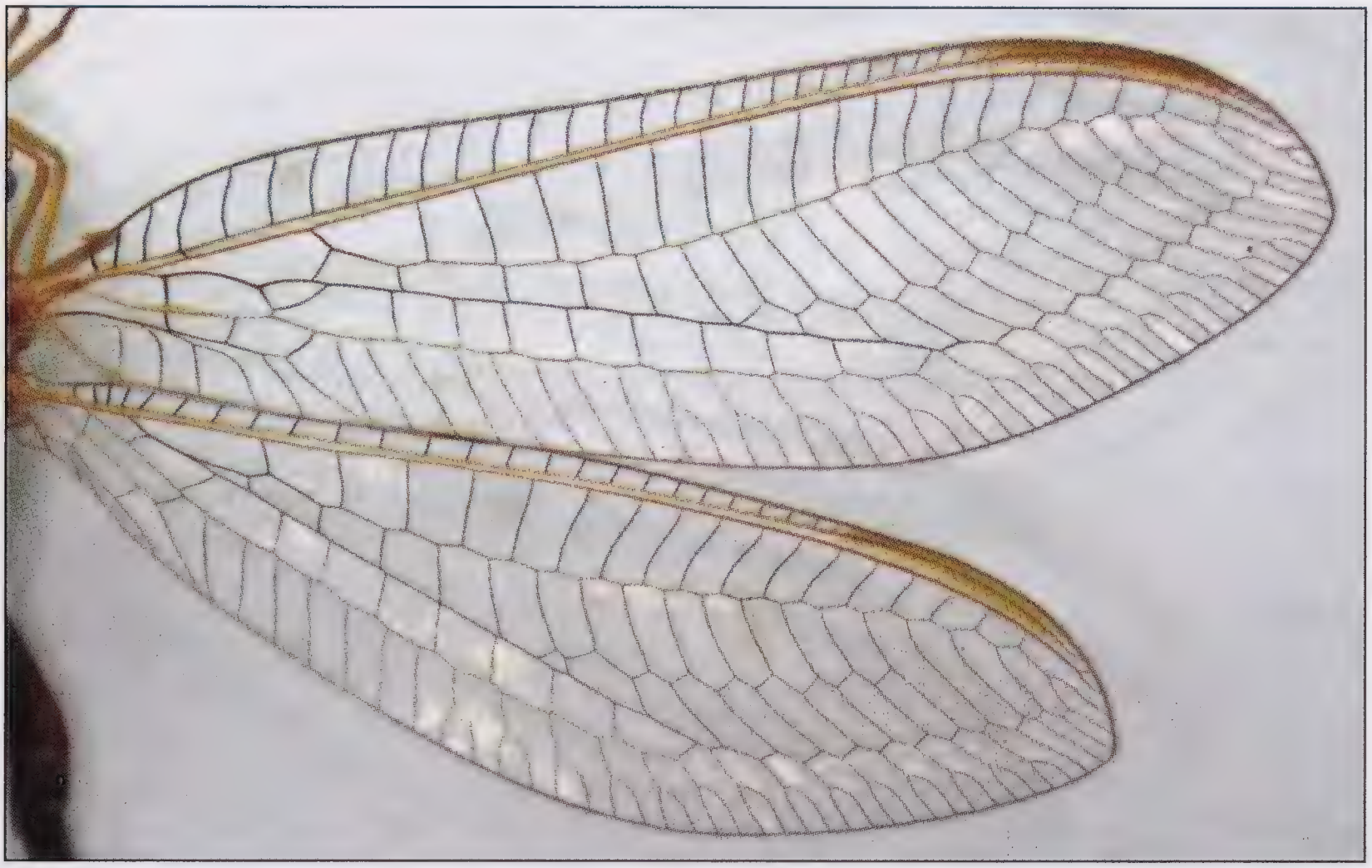

Fig. 2. Wing venation of *Nineta pallida* (specimen from Wendover Woods). The inner gradates run more or less parallel to vein Rs.

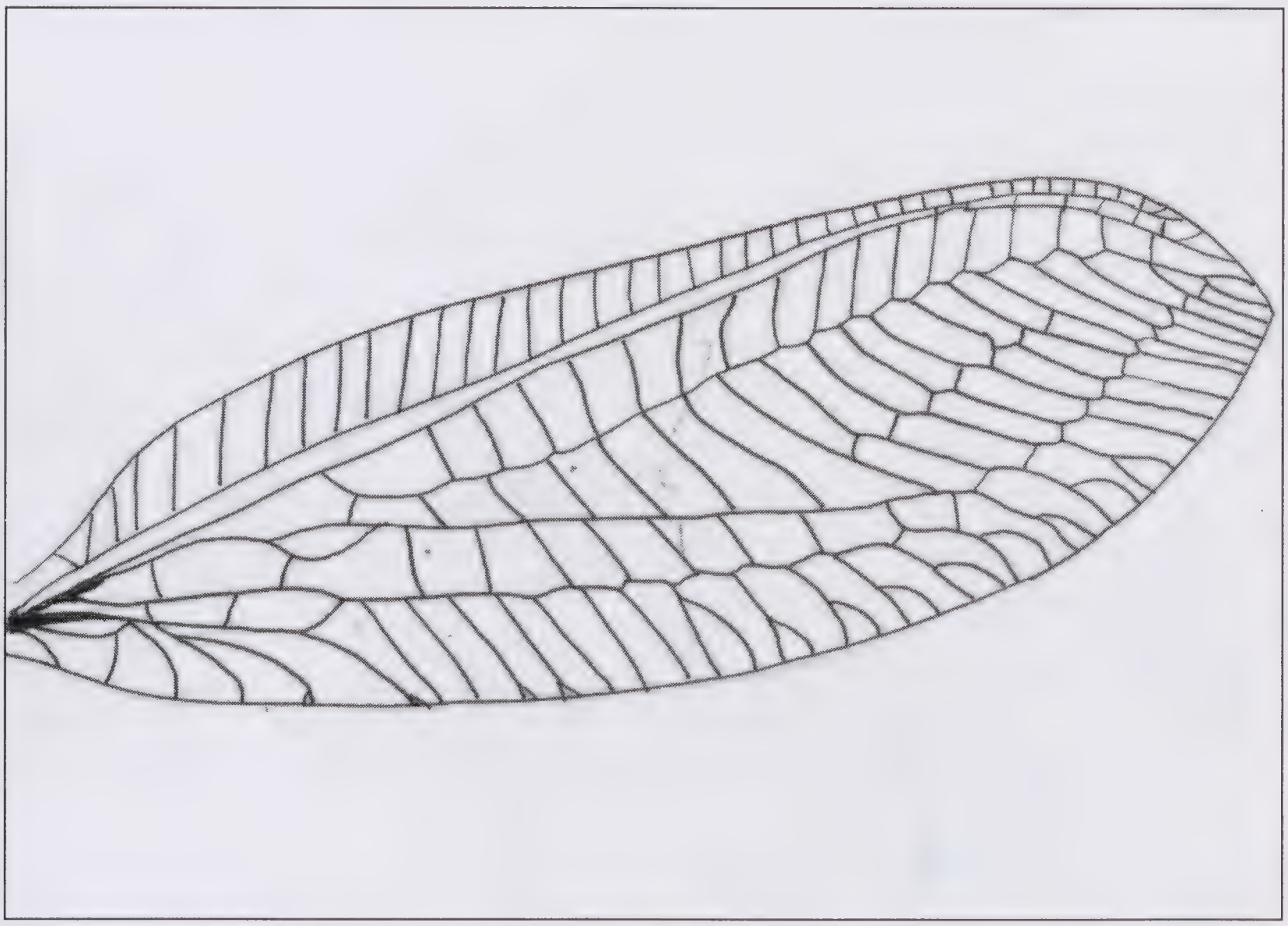

Fig. 3. Forewing venation of *Nineta inpunctata*. The inner gradates and vein Rs tend to converge towards the wing apex. Modified from the photograph in Aspöck *et al.* (1980).

Table 1. Gross morphological characters of value in the separation of female specimens of *Nineta inpunctata* and *N. pallida*. Note that dry-preserved specimens often distort and discolour; specimens preserved in alcohol may fade to a uniform green colour with the passage of time.

Parameter	***Nineta pallida* (♀) see Plate 1**	***Nineta inpunctata* (♀) see Plate 2**
Head	Ground colour green with a slender red line between the antennal basal sockets	Immaculate green
Antennal scape	Marked externally by a red spot reaching the pedicel	Uniformly green
Antennal flagellum	Brown	Pale grey in its basal part (1/5) and darker in the remaining segments
Thorax	Dorsal yellow green stripe, marked laterally by two brown shadings	Greenish without any brownish lateral marks
Abdomen	Yellow green with lateral brown shadings	Uniformly green
Wings	Pseudomedian vein in the forewing black	Pseudomedian vein in the forewing green
	Inner and outer gradates form parallel lines parallel to vein Rs (Fig. 2)	Inner gradates converging apically in relation to vein Rs (Fig. 3)
	All cross veins in the forewing green or only partially black	All cross veins in the forewing completely black.

(Canard, 1985); the adults are on the wing from July to October (Zeleny, 1984). In studied populations, the females are probably in ovarian diapause in the summer in response to long daylight. At the end of summer and the beginning of autumn, they begin to lay eggs which are larger than those of other green lacewings (1.25 mm *versus* 0.9 mm in *Nineta flava*, for example). The eggs are deposited in bundles of 5 to 10 (mean = 8.5), at the extremity of the needles of the host tree, suspended on relatively short stems (3.2 mm *versus* 9.0 mm in *N. flava*) and usually glued to one another (Plate 3), as is the case with other *Nineta* species. *Nineta pallida* is, on the basis of available evidence, the only green lacewing which overwinters as first-instar larvae, owing to photoperiod responses and a strong tolerance to frost. The mean cold hardiness of young larvae reaches –25°C for larvae ex-ovo (Canard & Vannier, 1992), and –17.9°C when collected in the field in January (Vannier & Canard, 1989). The first moult occurs in spring (April), the second one at the beginning of June and the full-grown larvae spin heavy cocoons (25 to 30 mg) in July. The total larval life span lasts more than nine months.

Map 1. The known distribution (at March 2014) of *Nineta pallida* in France. Base map copyright © histgeo.ac-aix-marseille.fr.

Map 2. The known distribution (at March 2014) of *Nineta pallida* in the British Isles.

Such an unusual slow development is regulated by winter temperature and in particular, by means of curious and contradictory photoperiod sensitivities throughout the larval stage: The first-instar larvae are slowed by decreasing day length while, conversely, the third-instar larvae are slowed by increasing day length (Canard, 1988, 1990); the prenymph and the nymph within the cocoon are similarly slowed (Canard, 1989). To the best of our knowledge, this type of voltinism regulation is unique to the Neuroptera.

Almost nothing is known about the ecological needs, overwintering mode, egg-laying, or larval development and sensitivity of *N. inpunctata.* It was supposed to be univoltine by Zeleny (1984), who reports adult flight in spring.

Distribution of *Nineta pallida*

Nineta pallida has a macro-distribution affecting, primarily, Central Europe, occurring from Ukraine, Romania and Bulgaria in the east to France and the extreme north of Spain in the Pyrenean montane part of this country, extending northwards to some isolated locations in Fennoscandia (Popov, 2002). In Western Europe, it is known in Belgium, Germany, Switzerland, Italy and France. Within France, it is known from eight of the country's administrative regions mainly of the eastern part of the country (Map. 1):

This affects 21 of the numbered administrative départements as follows:

- North-east: Alsace (68) and Lorraine (55, 57, 88) ;
- East: Franche-Comté (25, 39), Rhône-Alpes (1, 26, 69, 73, 74),
- Centre: Limousin (23),
- South-east: in the alpine zone of Provence-Alpes-Côte-d'Azur (4, 5, 6) and in the Cévennes zone of Languedoc-Roussillon (30, 48)
- South-west: Pyrenean zone of Languedoc-Roussillon (11) and in Midi-Pyrénées (9, 31, 65).

The three British Isles records of *N. pallida* are presented in Map 2. These affect the two south-eastern English counties of Buckinghamshire (VC 24; two records) and West Suffolk (VC 26; 1 record).

Distribution of *Nineta inpunctata*

Nineta inpunctata has a macro-distribution similar to that of *N. pallida*, from the Ukraine and western Siberia, Romania up to France and Britain including the northern territories of Norway, Sweden and Finland. It is everywhere rare and is considered to be endangered in those countries where formal *Red Lists* are published, including Germany (Saure & Getsberger, 1991) and Switzerland (Duelli, 1994). In France, only three localities are known for this species: Rhône-Alpes (26), Centre (37) and Limousin (87); in Britain, only a single capture is reliably recorded, in the south-eastern county of North Essex (VC 19).

The true status of *Nineta pallida* in Britain

Given the enormous amount of targetted recording effort throughout the 1980s, on the part of a significant number of entomologists, together with the fact that the green lacewings from most of the Rothamstead Insect Survey (RIS) light traps and all of the RIS suction traps operated during that entire decade have been examined by CWP, it is almost inconceivable that *Nineta pallida* is a long-term resident that has been overlooked. On the other hand, whether *N. pallida* is an overlooked and *newly*-established resident or an immigrant to Britain remains an open question.

Tantalisingly, Plant & Harvey (2006) record that *Picea abies* (Norway Spruce) is commercially grown (as Christmas trees) at the Wendover capture site, where it forms around 13% of the woodland here. Unfortunately, the situation is less encouraging at the other two sites. Apart from occasional Christmas trees planted in private gardens, the closest significant amounts of *Picea abies* to the Westcott site are to be found at Finemere Wood (5 km due north) and at Bernwood Forest (12 km south-west). Both of those locations have been surveyed very regularly for moths by DW over the past five or more years and no *Nineta* species have ever been recorded at the light traps. Further east, Broom's Barn was until recently a crop research station dedicated to the study of Sugar Beet *Beta vulgaris*; finding either *Picea* or *Abies* here would present a significant challenge.

On balance, therefore, immigration is probably the most likely source of the three British records of *N. pallida*. This is further supported by the fact that all three records relate to females – the sex most prone to dispersal for the purpose of egg-laying. However, there is no reason at all to suppose that *Nineta pallida* may not become a resident British species over time, if immigrant females are successful in finding areas where either *Abies* or *Picea* trees are plentiful. Such trees should certainly be carefully searched during the autumn, through winter and into early spring for the characteristic eggs attached to the tips of the tree's needles (Plate 3) and from autumn to early June summer to look for (and rear) larvae (Plate 4).

Acknowledgements

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Lowest numbers ever of the Four-spotted Moth *Tyta luctuosa* (D.&S.) (UK BAP Priority Species) at Werrington Brook Drain, Peterborough, in 2013

I recently reviewed the status of the Four-spotted Moth *Tyta luctuosa* (D.&S.) at Werrington Brook Drain, Peterborough, from 2000 to 2011 (2012. The phenology of the Four-spotted Moth *Tyta luctuosa* (D. & S.) at Werrington, Peterborough, East Midlands, 2000-2011, with comments on the 2011 season. Annual report 2012. Huntingdonshire Moth & Butterfly Group). The summer of 2013 was unquestionably the worst so far recorded for the population of this rare moth at this site, which I have been monitoring annually since 2000. The moth has been breeding locally at this site since at least the 1930s (the late J.W. (Bill) Turner, pers. comm.). Only two adults were seen of this lover of warmth and well-drained banks during 13 transect counts from 30 April to 9 July 2013 and the first adult of the year at this site was not seen until 3 June. This was a gravid female, suggesting males had emerged earlier but had not been seen. This total of two individuals compares with 16 adults throughout the whole flight season of 2012, which was previously the poorest year since 2000. 2012 was the wettest and dullest summer on record in the east of England. The highest totals of Four-spotted Moths for a year on this transect route have been 121 in 2004 and 88 in 2000. My wife, Rachel Thomas, was the first to spot a single male Four-spotted Moth at Woodnook Valley SSSI, Lincolnshire, when we visited this known site on 31 May, and that was our first of this species for the year anywhere, which is at least two weeks later than in an average year and a full month later than in the earliest of seasons at Werrington Brook Drain .

A further piece of bad news is that the vegetation on the ditch bank on which the moths breed at Werrington Brook Drain has not been scraped back or cut down yet. Normally this operation takes place in late August. This is necessary to maintain the sparse, relatively short sward and hot conditions, with patches of bare earth, which this moth favours. In 2013 the wrong bank was cut by the Environment Agency (EA) – the first time this has happened since 2000 – apparently due to Health and Safety concerns from the authorities responsible for the adjacent East Coast railway line. As I write this note, in January 2014, the vegetation on the occupied bank is standing one metre tall. I have been sending reminders to the EA regularly since August, and have recently received assurance that the vegetation will be flailed before the spring to reinstate short sward conditions and hopefully an appropriate hot micro-climate into which the adult moths can emerge and fly from late April onwards. I shall of course be monitoring this situation and reporting back.

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NOTES ON CADDISFLIES (TRICHOPTERA) COLLECTED BY J. J. F. X. KING IN CO. DOWN INCLUDING TWO SPECIES NEW TO NORTHERN IRELAND

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Abstract

A collection of unidentified pinned adult caddis flies (Trichoptera) in the Hunterian Museum, collected by J. J. F. X. King in the Newcastle area, County Down, in 1912 was examined. A total of eight species were determined and two of these are new to Northern Ireland – *Wormaldia occipitalis* (Pictet) and *Tinodes maclachlani* Kimmins.

Keywords: Trichoptera, Northern Ireland, J. J. F. X. King, records, *Wormaldia occipitalis*, *Tinodes maclachlani*.

Introduction

James Joseph Francis Xavier KING (1855-1933) was a Scottish entomologist. Anon (1933) states that he was an artist by profession, becoming Professor of Art at the University of Glasgow. This was not quite accurate as he was a lecturer in drawing and architecture, perspective and geometry and also librarian at the Glasgow School of Art although it was and is linked academically to the university. However, he was also a Lecturer in Economic Entomology from at least 1899-1901, teaching agricultural entomology at the West of Scotland Agricultural College in Glasgow (Hancock, 2008, 2011; biographical notes on file at The Hunterian compiled by E. G. Hancock). Each year, when the summer term ended, he would go immediately to which ever destination had been planned for that year and stay there for up to two months, sometimes longer. His holidays were spent in one area, dividing his time between collecting, pinning and setting insects. He was a prolific collector. Apparently common and widespread species were taken in large numbers in each place. This was then an excellent way of finding rare and unusual species 'hidden' among superficially similar kinds. As a result, he discovered numerous species new to the British Isles. His main collection is in the Hunterian Museum but his material can also be found in other museums' collections including the National Museum of Ireland.

King collected mainly in Scotland and also in the south of England. However, he had a particular interest in Ireland and visited several times. His trips resulted in two major publications on the Irish Neuroptera (*sensu lato*) (King, [1888] 1889; King and Halbert, 1910). These were seminal works dealing with the Ephemeroptera, Mecoptera, Megaloptera, Neuroptera (*sensu stricto*), Odonata, Plecoptera, Psocoptera and Trichoptera. After the 1910 list, he visited Belfast (1911) and Co. Down (1911, 1912) but did not publish any trichopteran records from these later trips to Northern Ireland. Recently, EGH located 21 pinned caddisflies from his 1912 trip in the Hunterian collections and these undetermined specimens have now been identified

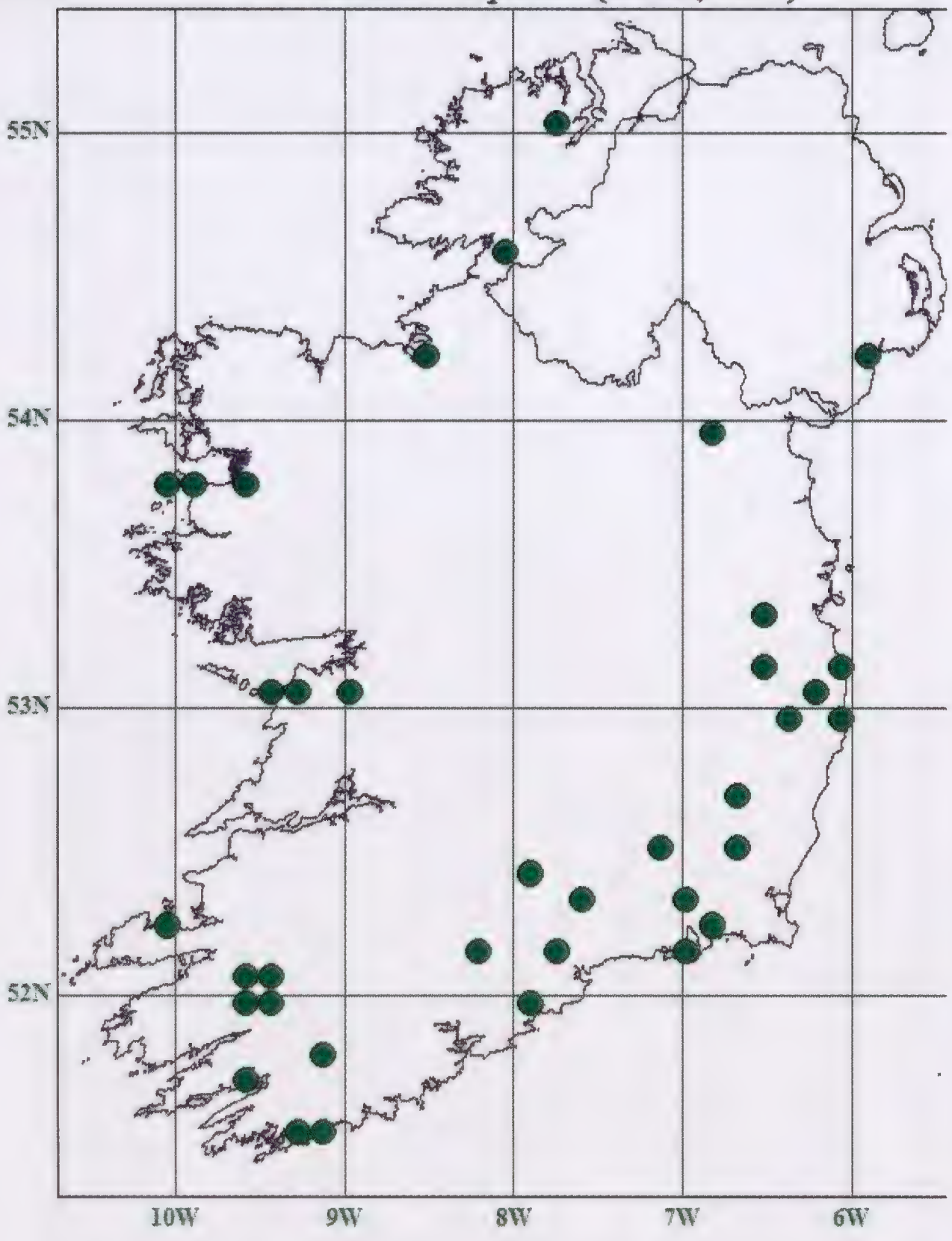

Figure 1. The Irish distribution of *Wormaldia occipitalis* (Pictet, 1834).

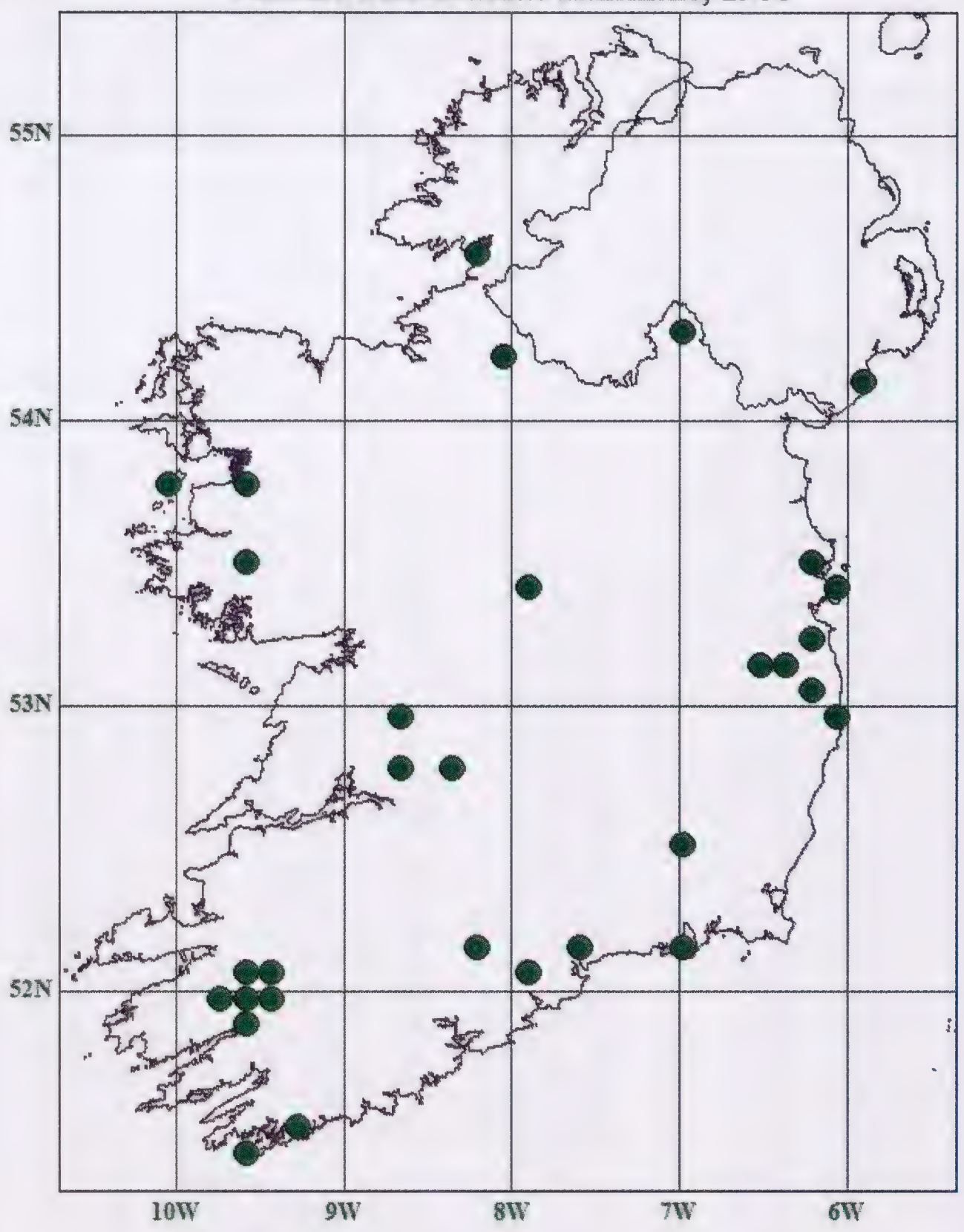

Figure 2. The Irish distribution of *Tinodes maclachlani* Kimmins, 1966.

on the Shimna R. which are shown, with a drain inserted, on the historic six-inch map on the Ordnance Survey of Ireland website (*maps.osi.ie/publicviewer*, accessed 14 March 2014). He also collected on the River Burren for he mentions meadows on the Castlewellan road and a "marsh cemetery". The latter presumably refers to a marsh on the river near the Drumee cemetery which is just off the Castlewellan road. The Burren flows beside the Castlewellan road before joining the Shimna.

The records

***Agapetus fuscipes* Curtis, 1834** (Rhyacophilidae)
Bloody Bridge R. (J3826), 3♂♂ 2 July 1912; R. Burren (J3534), 2♂♂ 19 August 1912; R. Shimna (J3532), 3♂♂ 1 July 1912. **New to Co. Down**. McLachlan (1885) recorded the species from Cave Hill, Co. Antrim.

***Wormaldia occipitalis* (Pictet, 1834)** (Philopotamidae)
Marshes (J3631), ♂ 22 July; ♂ 23 July & ♀ 2 August 1912. **New to Northern Ireland.** The known Irish distribution of *W. occipitalis* is shown (Fig. 1).

***Tinodes maclachlani* Kimmins, 1966** (Psychomyiidae)
Bloody Bridge R. (J3826), ♂ 2 July 1912. **New to Northern Ireland.** The known Irish distribution is shown (Fig. 2).

***Diplectrona felix* McLachlan, 1878** (Hydropsychidae)
Marshes (J3631), ♂ 2 August 1912; R. Burren (J3534), marsh [near] cemetery, 2 ♂♂ 19 August 1912. **New to Co. Down**. McLachlan (1885) recorded the species from Cave Hill, Co. Antrim.

***Silo pallipes* (Fabricius, 1781)** (Goeridae)
Marshes (J3631), ♀ 23 July 1912. *S. pallipes* is known from all six counties of Northern Ireland.

***Sericostoma personatum* (Kirby and Spence, 1826)** (Sericostomatidae)
R. Shimna (J3532), 2♂♂ 1 July 1912. *S. personatum* is known from all six counties of Northern Ireland.

***Beraea maurus* (Curtis, 1834)** (Beraeidae)
Marshes (J3631), ♂ 23 July 1912. **New to Co. Down**. *B. maurus* is already known from Cos Antrim, Derry, Fermanagh and Tyrone in Northern Ireland.

***Mystacides azurea* (Linnaeus 1761)** (Leptoceridae)
R. Shimna (J3631), marshy ground, ♀ 19 July 1912; R. Burren (J3533), meadows, Castlewellan road, ♀ 10 August 1912. *M. azurea* is already known from five of the six counties of Northern Ireland including Down.

Acknowledgement

The distribution maps were prepared using DMAP and the senior author is very grateful to Alan Morton for supplying the programme.

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Xanthorhoe biriviata (Hb.) (Lep.: Geometridae), Balsam Carpet: the first record for Bedfordshire (VC30)

Mike and Marg Harrison trapped an unfamiliar "carpet" moth in their Bromham garden on 3 April 2014 and emailed a photograph to Andy and myself, as the Bedfordshire Macro-moth Recorders, for our thoughts on it. I identified it as *Xanthorhoe biriviata* and this was confirmed from an e-mailed photograph, by Colin Plant. As far as I am aware this is the first record of the species in VC30.

The primary larval food plant is *Impatiens capensis* Orange Balsam which, according to Boon & Outen (2011. *Flora of Bedfordshire* Bedfordshire Natural History Society), is known to be present along the River Ouse nearby.

As the species is double-brooded, searches for the moth around its foodplant at this and other sites in the county will be carried out later in 2014.

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Crimson Speckled *Utetheisa pulchella* (L.) (Lep.: Arctiinae) recorded in Dorset

A sort visit to Dorset in early September 2013 allowed me to run a light trap on three nights at West Bexington and on one night at Gillingham. West Bexington produced two Dark Sword-grass *Agrotis ipsilon* (Hufn.) on 9 September plus one more with a single Silver y *Autographa gamma* (L.) on the next night. The night of 9 September also produced Pale Eggar *Trichiura crataegi* (L.), which I had not seen since 1979 as well as, much more remarkable and to great excitement, a Crimson Speckled *Utetheisa pulchella* (L.). This is a species I had not seen since 1961, when John Langmaid and I took two in one night at Swanage.

Most immigrants arrive in good condition, but the 2013 *pulchella* was a little worn. Also present at West Bexington were a few White-point *Mythimna albipuncta* (D.& S.), possibly residents, together with many Angle Shades *Phlogophora meticulosa*

(L.) which may well have been immigrants. Two *A. gamma* also appeared at Gillingham.

The weather was blustery with warm days and cold nights, but had turned wet by the end of our break. Immigrant butterflies were restricted to a few Red Admirals *Vanessa atalanta* (L.).

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The Concolorous Moth *Chortodes extrema* (Hb.) (Lep.: Noctuidae) at the Hampton Newt Reserve at Orton Pit, Peterborough in 2013

The Concolorous Moth *Chortodes extrema* (Hb.) is a Priority Species within the UK Biodiversity Action Plan; its status and distribution in the Peterborough area has been reviewed (Waring, 2013. Concolorous Moth *Chortodes extrema* (Hb.) (Lep.: Noctuidae) in Peterborough and nearby during 2010. *Ent. Rec.* **125**: 133-135).

On 11 June 2013, we were struggling with overcast days in which it was difficult to find suitable conditions for day-time transect monitoring of the Four-spotted Moth *Tyta luctuosa* and other day-fliers and cold nights for light-trapping nocturnal moths. That night we held a joint meeting between the British Entomological & Natural History Society (BENHS) and the Peterborough Biological Recording Group at the Hampton Newt Reserve at Orton Pit on the south side of Peterborough, with the aim of investigating whether the Concolorous Moth has an established population amongst the extensive stands of the larval foodplants Small-Reed *Calamagrostis* spp. at this site. The moth was first recorded here by Peter Kirby in 2010 and he found more in 2011. Assisted by site manager Paul Furnborough, we set up two Robinson traps on a generator by *Calamagrostis*. The dusk temperature was 12˚C, falling to 10˚C by midnight, with light cloud and the lightest south-westerly breeze. At 23.35 hours, William Last saw a pale-coloured moth flit past him, netted it and it proved to be a Concolorous. We had seen no more by midnight, when each trap held only a handful of moths and none of the target species, so we decided to pack up. An established population is the most likely explanation for this result, though we had hoped to see more individuals. I noticed that the ground on which the *Calamagrostis* grows here is much drier than any part of Woodwalton Fen which is now much wetter than even ten or twenty years ago due to its use as storage of nutrient-rich flood water. One indication of the enormous effect of this is the massive increase of Common Reed *Phragmites australis*. In many of the open areas reed and its associated litter so dominates that it is suppressing all other plant life. The changes in hydrology and Reed growth, together with cutting and grazing regimes, almost certainly account for the apparent loss of the Concolorous from this National Nature Reserve. Unfortunately, the Marsh Carpet *Perizoma sagittata* (Fabr.) (a Red Data Book species) and the Meadow-rue *Thalictrum flavum* on which it depends appear to be being squeezed out and lost in the same way, but that is another story to report on in more detail.

In Waring, 2013 (*op. cit.*), I examined the other recent records for the Concolorous in the Peterborough area and in Huntingdonshire. I take this opportunity to update that account with the only two records received for Huntingdonshire in 2013 by County Moth Recorder Barry Dickerson. These are:

> Monks Wood, east and west fields plus ride, TL 1980, 5 adults at light-traps 29 June 2013, Chris Gardiner and Ron Fellows;
>
> Holme Fen, near Trundle Mere, TL 201902, 1 adult, At light-trap, 10 June 2013, Martin Lovell.

There have been no further records of the Concolorous since 2010 from the light-trap at Elton, Huntingdonshire, where Brian Stone captured individuals in three of the years between 2006 and 2010 even though Brian has continued to operate the trap (Brian Stone, *pers. comm.*, Feb. 2014).

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Cimbex luteus (L.) (Symph.: Cimbicidae) at Wicken Fen

The article by Ian Barton on *Cimbex luteus* (L.) (Symphyta: Cimbicidae) feeding on sallow *Salix* sp. (*Ent. Rec.* **125**: 198), included a photograph of the larva of this species that immediately reminded me of a photograph that I took of a similar looking specimen taken in 1974 that was never fully identified.

On 21 September 1974, I went with Michael Chalmers-Hunt to Wicken Fen, Cambridgeshire. As Michael was a keen member of CAMRA, the Campaign for Real Ale and I was quite prepared to learn more about his interest we did not arrive on the fen until mid afternoon; the visit was briefer than we originally intended. However, my diary notes record the finding of *Dialectica imperialella* (Zeller) mines and *Ethmia quadrillella* (Goeze) larvae.

Late in the afternoon as we made our way back towards the wind-pump in the north corner of the fen I noticed at some distance, perhaps 15 yards or so, what appeared to be a conspicuous larva on a sallow bush. It is all really rather a long time ago, but I recall having a serious struggle to get round various water obstacles near the brick pits in Compartment 22 and then re-locating the larva on its perch. It was secured. At this point it was immediately identified as a sawfly larva, but at about 30 mm, quite an impressive one.

At the time it was photographed and a few days later (26 September) the live larva was shown to members at an indoor meeting of the British Entomological & Natural History Society, held in those days at the Alpine Club in London. At the time it was suggested that it probably belonged to the genus *Cimbex* or *Trichiosoma* (Hym.: Cimbicidae). I failed to rear the adult insect.

So, not a lot more was thought about this encounter until I saw the illustration of what appears to be a rather similar striking larva in the recent number of this journal.

On the advice of the Editor I showed my photograph to Guy Knight at Liverpool, who kindly responded as follows: "*Yes, this certainly does look like* Cimbex luteus. *As well as the colour and the foodplant, the pattern of warts (missing on the top middle section of the body) is also a good fit. A large proportion of the old records for this species are from eastern England and especially around the Wicken Fen area – R. B. Benson's 1928 site list mentions specimens from Quy Fen, Ely, Swaffam Bulbeck, Wittlesea etc. in the Cambridge museum collections. A number of the most recent ones are from this general area as well. It is great to have a 1970s record to show that there has been some continuity at the site too*." My specimen would seem to add the species to the list of Symphyta recorded from Wicken Fen (Friday & Harley, 2000. *Checklist of the Flora & Fauna of Wicken Fen*. Harley Books).

CAMRA, the Campaign for Real Ale, is an independent voluntary consumer organisation based in St. Albans, England, whose main aims are promoting real ale, real cider and the traditional British pub. It is now the largest single-issue consumer group in the UK and is a founding member of the European Beer Consumers Union (EBCU). Michael would have appreciated this!

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The following journals, from the estate of the late Dr Gordon Pringle, a long term subscriber to our own journal are available for sale:

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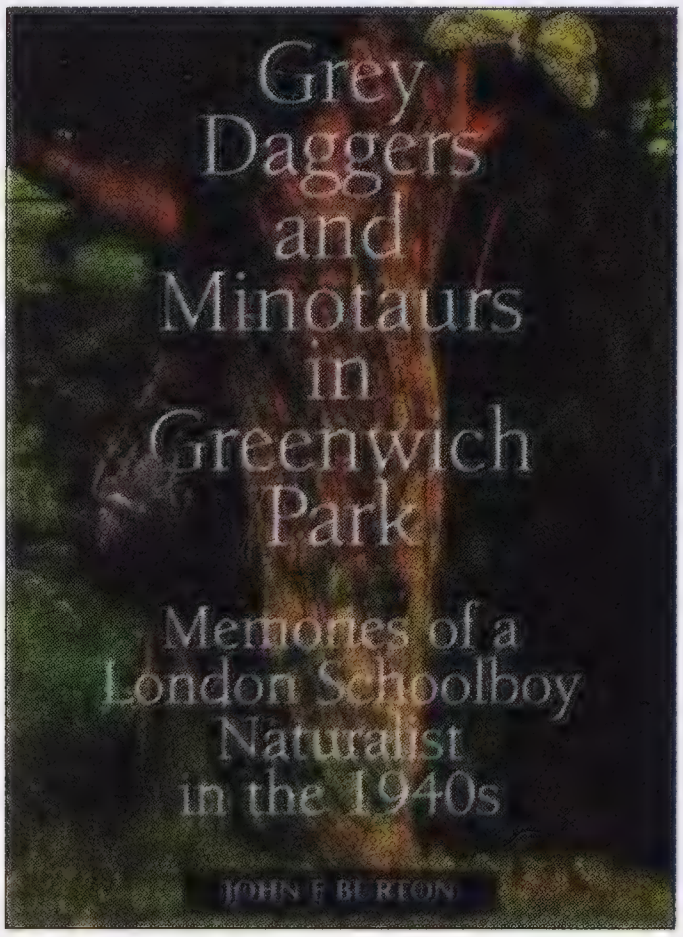
BOOK REVIEWS

Grey Daggers and Minotaurs in Greenwich Park. Memoirs of a London Schoolboy Naturalist in the 1940s by **John F. Burton**. 400pp., 155 x 213 mm, paperback, ISBN: 978 1 782 80206 8. Clio Publishing, 30a Beaulieu Road, Christchurch BH23 2EA, £16.50.

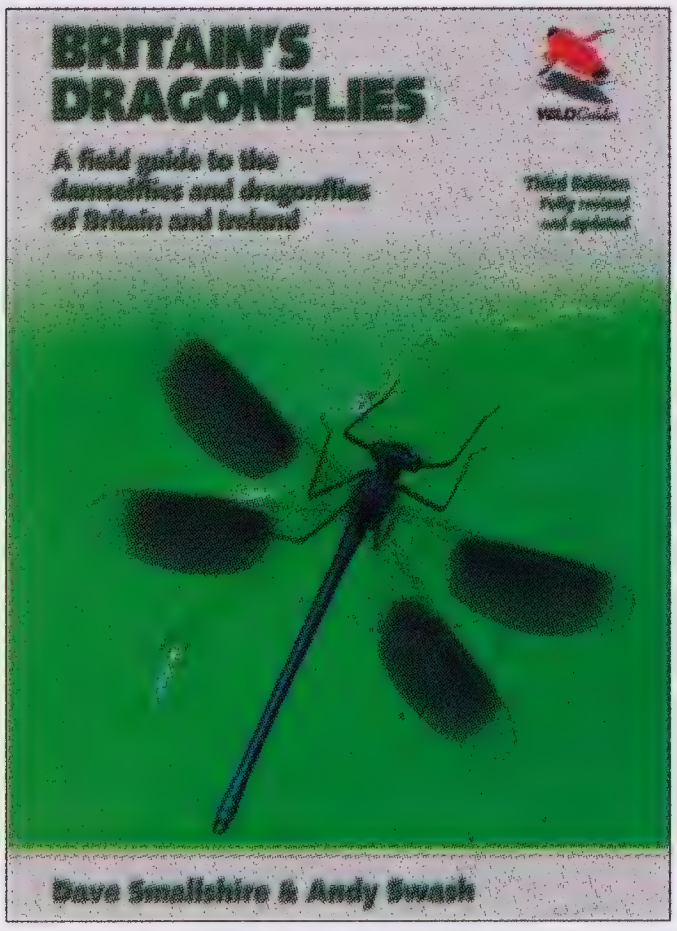


Older readers will doubtless recall the name of John F. Burton from his work with the BBC Natural History Unit, which he joined in 1960, and in particular for his programme "Sounds Natural" on the wireless (or, the *radio*, for younger readers). Now in his eighties and resident for the greater part of his time in Germany, John has committed to paper his natural history and related experiences during his formative years.

South-east London has certainly produced its share of famous entomologists, amongst which one might mention in particular J. W. Tutt, the founder of this very journal. Unsurprisingly, therefore, people who are today active in entomology in the broader London area and especially those who study the Lepidoptera, will recognise in this book the names of a good number of "classic" collecting localities. For these readers, I suggest that this autobiographical work will have a level of interest higher than it will for those who live further afield. I do know some of the areas referred to, but this was not my own natal area; strange then, as I determined to read on, that I found the work quite fascinating. Before I knew it, I was half way through and had completely lost track of time. Perhaps this is, at least in part, because as a representative of the post-war generation of naturalists affecting south-east London, John Burton met just about all, and knew most, of the "famous" names of that era. Many are mentioned, some in more detail than others, and this is something that is likely to appeal to those whose interest in entomology is broader than just the beasts that they chase. On the other hand, perhaps I recognise in this author various familiar elements of my own schooldays, wandering around the north Staffordshire area without fear of strange men lurking in bushes (well, apart from gamekeepers, of course!), and so little traffic on the roads (in fact rather fewer roads) such that a bike ride to North Wales to watch Ravens was undertaken without even a thought. If so, then the appeal of this book may be wider than I imagine?

The work is inevitably a little idiosyncratic, particularly through the inclusion of a number of sketches from the author's diaries. These are of mixed quality and I would rather have seen less of the various animals and more of the famous localities as they then appeared. Overall, however, the style is rather endearing and the sketches are part of this. The book gives genuine insight to the true character of a man who was, albeit rather quietly and behind the scenes, one of England's better naturalists of his generation.

Britain's Dragonflies: A field guide to the damselflies and dragonflies of Britain and Ireland by **Dave Smallshire & Andy Swash**. Third edition, 224 pp., paperback with a waterproof jacket, finishing at 151 x 215 mm. ISBN: 978 0 691 16123 5. Princeton University Press, 6 Oxford Street, Woodstock, OX20 1TW (*nathist.press.princeton.edu*), 2014. £17.95.



Dragonfly books are starting to become as common as moth books, and so authors need to take note that with each new tome there should be presented some new matter of interest. This might be improved identification techniques, better quality photographs or even ecological information – something that scarcely gets a look-in within the pages of many identification guides.

This is the third edition of an existing work, first published in 2001 and then again in 2010. It claims to be "fully revised" and I have no reason to disbelieve that statement. A full 38 pages pass before we even start with species identification. The introductory chapters cover all aspects of odonatan biology and some useful pages on habitat masquerade under the heading of where to look for Dragonflies. In the section headed "*Watching and photographing Dragonflies*" we read that "*... netting to collect specimens is now the domain of a few scientists*". This is clearly not an anti-collecting statement and I am encouraged by the apparent acceptance of a scientific need for specimens, but I do hope that the ID section is up to par otherwise I may need to revisit this aspect. In fact the ID section is quite interesting. It starts with a very helpful guide on how to identify the species and this includes a word or two on colour variation. The following three pages present colour images of representatives of the fifteen genera of Odonata in Britain, together with a descriptive summary of each and directions to the relevant page in the text. Twelve pages of "*Adult identification chart*" follow and then two more pages of colour images to facilitate "*Identifying male emerald dragonflies, hawkers and emperors in flight*". A short glossary, that might have been better positioned in the pages dedicated to introducing Dragonflies, is followed by the individual species accounts which are extensive and copiously illustrated in colour. I reckon that there is little that the authors have overlooked in this excellent guide, but as a non-specialist in the group I regret I was initially somewhat overwhelmed by the data presented. I feel moderately confident that I would not be able to use the Adult Identification Chart unless I had at least a series of photographs from all the necessary angles or, ideally, the insect itself, in my hand for critical comparison. That is not to say that specimens need to be routinely collected, but in apparently trying to steer readers away from collecting they might inadvertently appear to be anti-net? There can be no harm in netting a Dragonfly for ID and then releasing it.

The work does not end here, however, and we have a further 22 pages covering the naming of the nymphs and their exuviae. All in all this is a superb, apparently accurate and certainly comprehensive guide to the British Isles species. One has to be cautious to discern Dragonfly, implying the Odonata, from dragonfly, with a lower case initial letter to indicate the Anisoptera as distinct from the damselflies (Zygoptera). There is also an annoying tendency to refer to the odonatan nymph as a larva – a term usually received for holometabolous species, but at least the authors do not seem to have fallen into the trap of calling a single exuviae an exuvium. A superb work – highly commended.

COLIN W. PLANT

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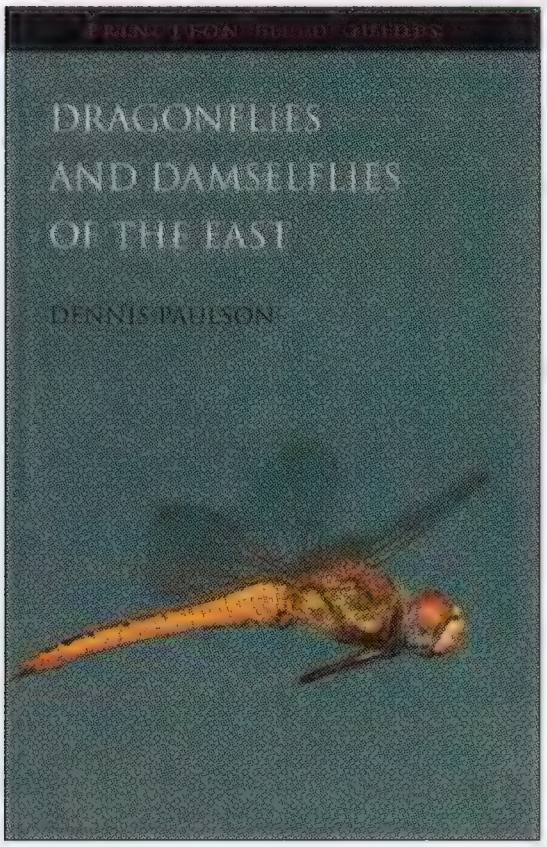

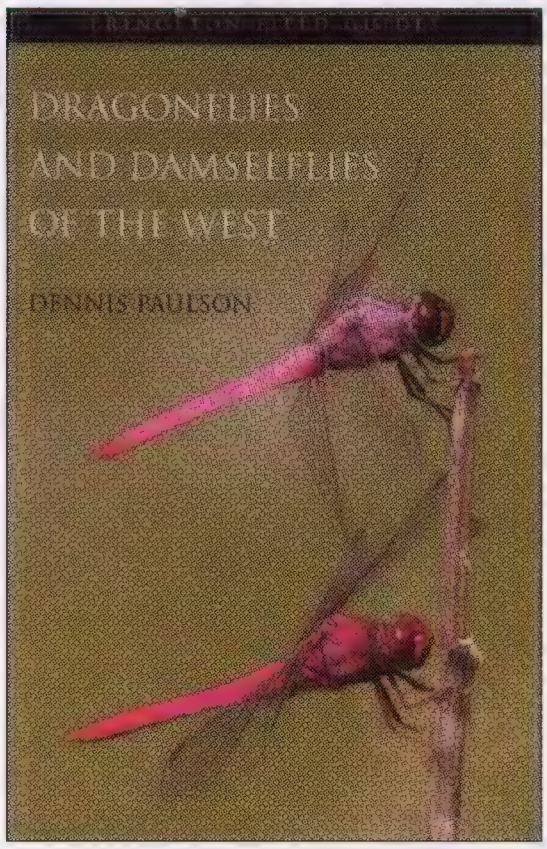

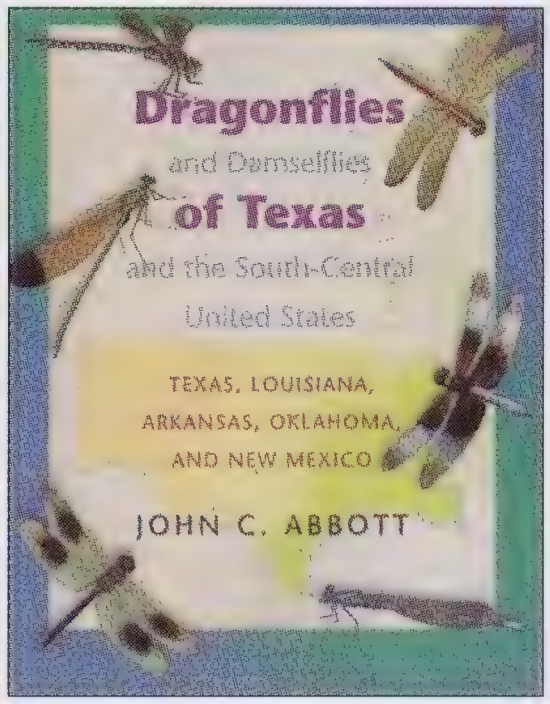

from the same publishers ***Dragonflies and Damselflies of the East*** by Dennis Paulson (ISBN 978 0 691 12283 0) and ***Dragonflies and Damselflies of the West*** also by Dennis Paulson (ISBN: 978 0 691 12281 6). Two superbly produced, high quality paperback works that together cover all 461 species of Odonata currently known from the USA and Canada. Priced at £19.95 each these are likely to appeal greatly to odonatologists everywhere. Also received from Princeton University Press ***Dragonflies and damselflies of Texas and the south-central United States*** by John C. Abbott (ISBN: 0 691 11364 5), £28.95.

Keys to the adults of the water beetles of Britain and Ireland (Part 2) by **Garth. N. Foster, David T. Bilton and Laurie E. Friday**. *Handbooks for the Identification of British Insects* **4**(5b), series Editor Mike Wilson. vi + 126 pp. 175 x 244 mm, paperback, ISBN: 978 090154 697 5. Published for the Royal Entomological Society by the Field Studies Council, 2014. £25 (Fellows of the Royal Entomological Society receive a discounted price).

This work treats the Hydrophiloidea (Helophoridae, Georissidae, Hydrochidae, Sperchidae and Hydrophilidae), including terrestrial species and in so doing completes the revision by the Royal Entomological Society of the keys to British water beetles (part 1, by Foster & Friday, was published in 2011).

Most of us are familiar with the old style keys in the *Handbooks* series; these were scholarly works, but in general were poorly-illustrated and frequently were enormously difficult to use unless the reader had some prior knowledge of the group affected. I am well-known for my dislike of "*keys for people who don't need keys*" and so I am delighted that in the last few

years this rather self-defeating approach has been ditched in favour of equally scholarly content that is presented in a far more user-friendly format. Copious illustrations are, in the main, placed adjacent to the text where the illustrated feature is mentioned so that there is no longer a need to constantly turn pages back and forth.

As a mere "dabbler" in the world of water beetles, I have tried very hard to avoid certain genera, notably *Helophorus*, passing specimens to other people if a name really was needed. My fear of this group of beetles has now been swept aside and testing these new keys on specimens expertly named (by others) in my collection has produced a remarkable success rate of 100%. From this, and from comments received from friends of the aquatic beetle persuasion, I conclude that these keys are an extremely valuable addition to the British entomological literature.

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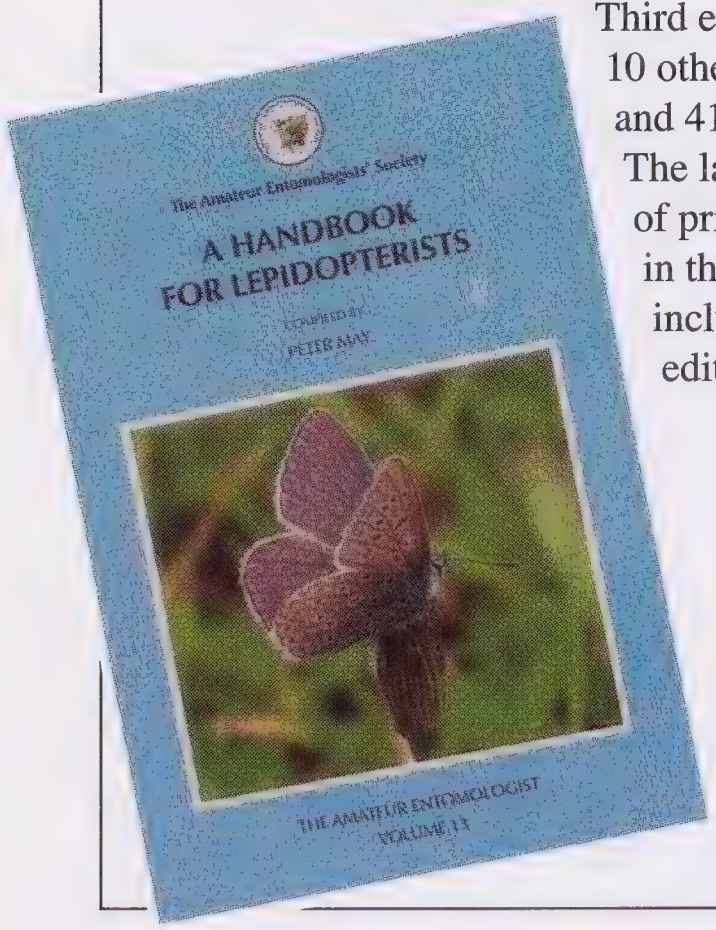

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Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

CLEPSIS DUMICOLANA (ZELLER, 1847) (LEP.: TORTRICIDAE), NEW TO BRITAIN

PEDRO PIRES

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(E-mail: pedromspires@gmail.com)

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Abstract

Clepsis dumicolana (Zeller, 1847) (Lep.: Tortricidae), is reported as a new species for Britain, from London.

Keywords: *Clepsis dumicolana*, Tortricidae, Britain.

Introduction

On the morning of 15 May 2014, a specimen of *Clepsis dumicolana* (Zeller, 1847) was observed on the east wall of the Royal Brompton Hospital, Chelsea (Middlesex, VC 21) resting on a leaf of ivy *Hedera helix* at mid-day (Plates 1 & 2). In the afternoon of the same day more specimens were observed on this wall and in total 15 individuals were counted, some resting on the ivy while others were flying up and down the wall covered with this plant. They showed a preference for resting at a height of about four metres on the wall.

On the next day a couple of *Clepsis dumicolana* was observed mating during the day. Opposite to the hospital St. Luke's Gardens a fence two metres high is covered with abundant Ivy. Here just a single specimen of *Clepsis dumicolana* was observed flying up and down on a tree where the ivy grew up to a height of around five metres (Plate 6). Further plants of ivy were examined on a two mile walk from the hospital to the Clapham Junction area on the Surrey side of the River Thames, but no additional specimens were observed. That night a single specimen was captured flying around the hospital wall. Over the next few days, with temperatures rising, less activity was observed during the day as this wall was in full sunlight, but some specimens were observed resting on the ivy leaves.

On 26 May 2014, two specimens were seen flying in the rain. Also one larva was seen, but did not correspond to the description of *Clepsis dumicolana* according to lepiforum web site, as it only had a black head and the first segment of the larval thorax was white instead of black. On 28 May 2014, three adults were seen and the same number the following day. On 30 May a pupal exuviae was found in the middle of the ivy (Plate 7) that looked very similar to the pupa of *Clepsis dumicolana* on the lepiforum site.

On 4 June, at around 6pm only one specimen was seen resting on the ivy leaves and again one on 6 June at 1pm. On 5 June some ivy leaves were observed which showed signs of larval activity (Plate 8) with silk and some skeletonising of the leaves, but no larvae were seen.

On 7 June, two places were chosen to operate an 8 watt UV actinic light. The first place was Battersea Bridge Hester Road with only *Eudonia angustea* (Curtis)

Plate 1. Male of *Clepsis dumicolana* (Zeller), London 2014. (Photograph by Pedro Pires)

Plate 2. Side view of male of *Clepsis dumicolana* (Photograph by Pedro Pires)

Plate 3. Female of *Clepsis dumicolana* (Photograph by Pedro Pires)

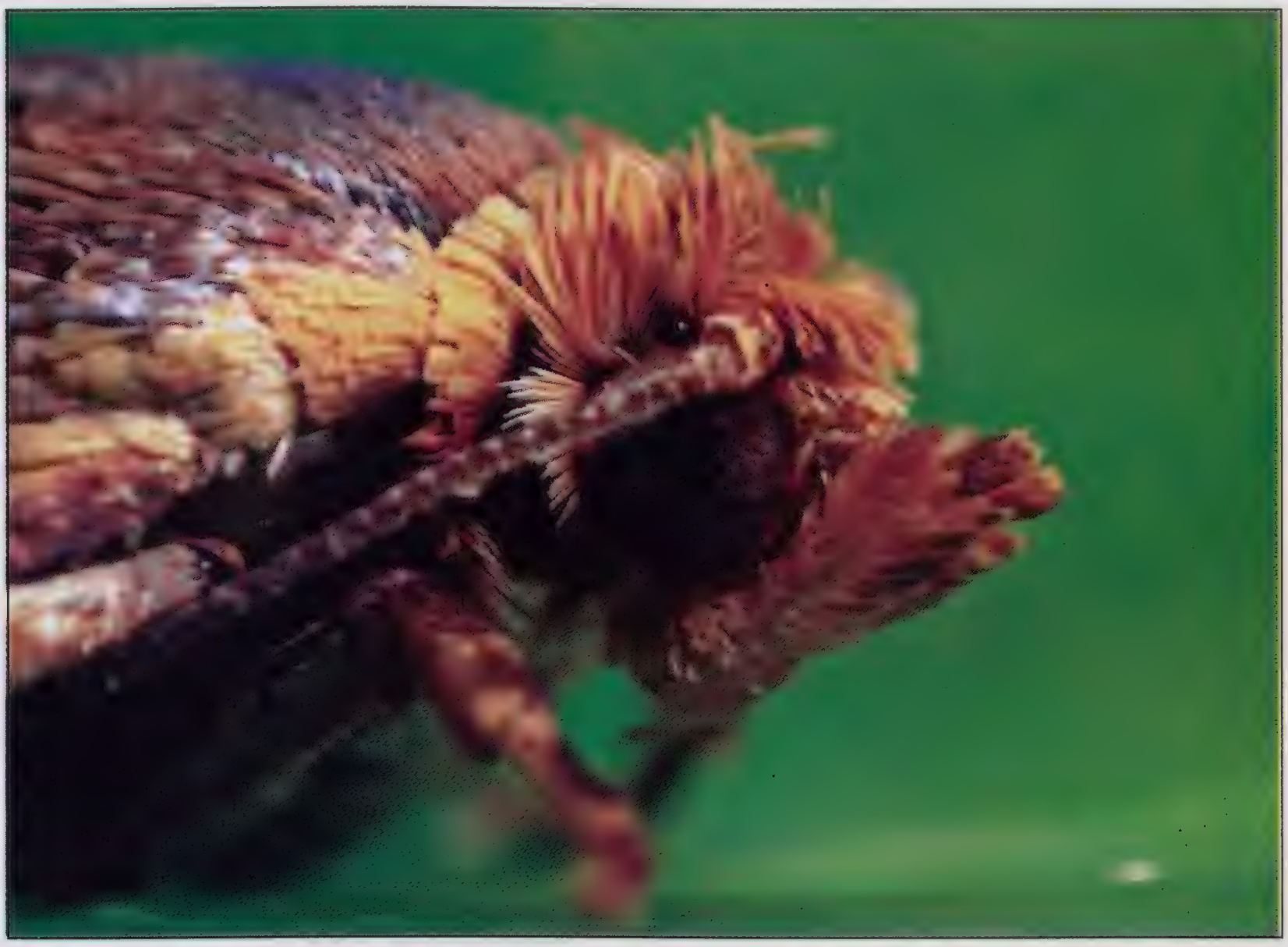

Plate 4. Female head detail of *Clepsis dumicolana.*

Plate 5. *Hedera helix* at Royal Brompton Hospital wall (Photograph by Pedro Pires)

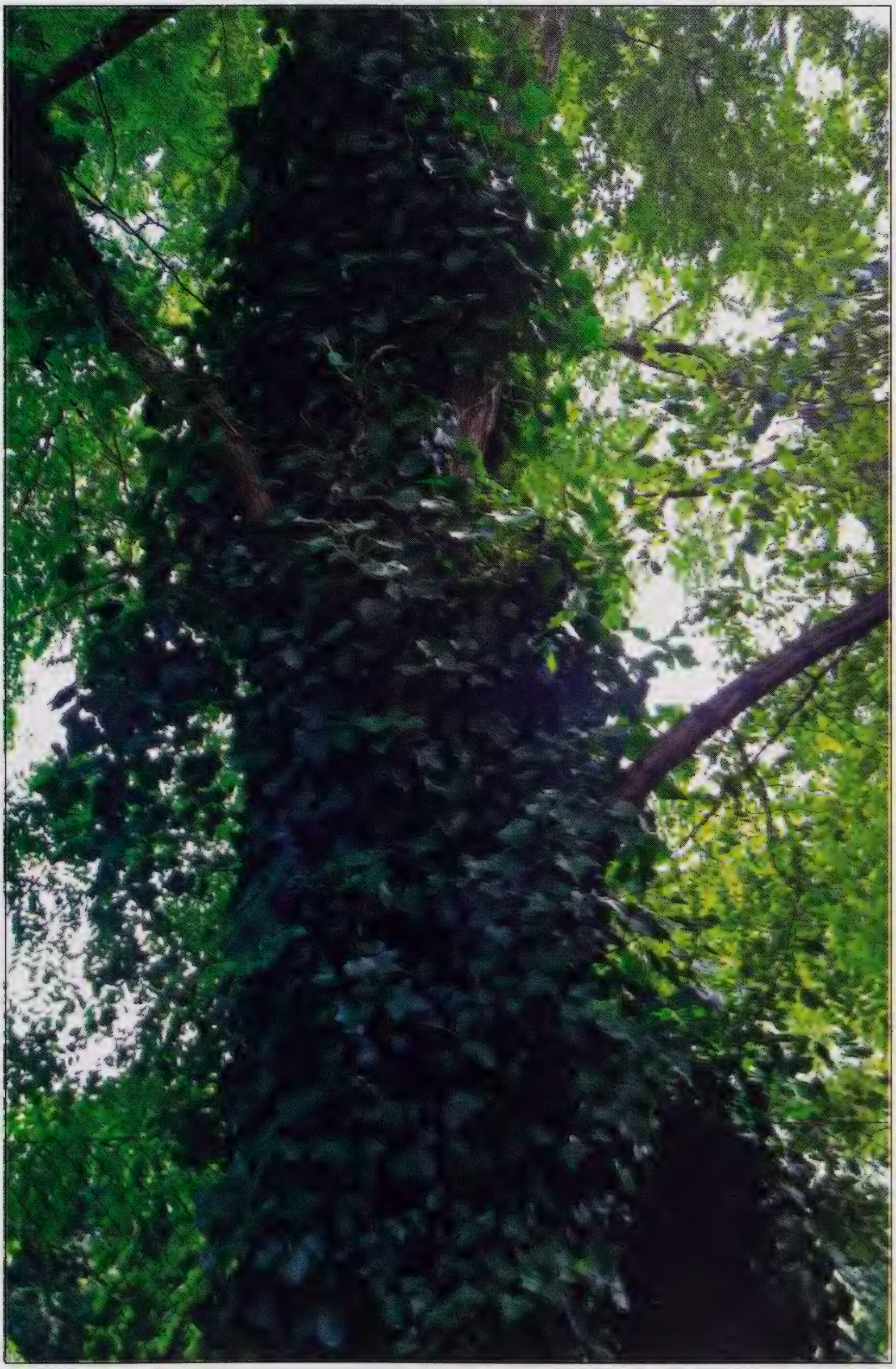

Plate 6. *Hedera helix* at St. Luke's Gardens (Photograph by Pedro Pires)

and *Ditula angustiorana* (Haworth) coming to the light and the second place was Battersea Square, with only *Peribatodes rhomboidarius* (D. & S.). Both places have ivy between three and four metres high. The first session was from 22.00 to 23.00 hours and the second from 23.30 to 00.30 hours. No *Clepsis dumicolana* were seen.

On 8 June, at around 6pm four specimens were observed flying actively over ivy leaves at four metres height. At around 8pm one specimen was captured resting on a wall near the ground, probably a tired female after laying its eggs (Plates 3 & 4). On 12 June another three specimens were seen resting or flying around ivy between 6pm and 8pm. On 16 June one specimen resting on ivy at 7.20am and also at 6pm. Another one seen on the 24 June flying over ivy leaves at 6pm and another one on the 30 June at 3pm. On 1 July four specimens were seen resting and flying over leaves of ivy at 4.30pm but on the next day only one was seen flying over ivy. Also on the 9 July one specimen was resting on ivy at 5pm.

Identification

Initially the species was identified by searching online at *www.lepiforum.de*. This website has a good number of pictures of this species. After recognizing that it was a new species for Britain some pictures were sent to Jim Porter of Butterfly Conservation and to my friend Martin Corley. The single male illustrated in Razowski (2002) is an obscurely marked specimen. The Chelsea specimens have a distinct cream inner edge to the median fascia and a basal patch that is often faint but delimited by a pair of dots. Duller, greyer specimens might be confused with *Syndemis musculana* (Hübner, 1799), but this is most unlikely with the majority of individuals. At Martin Corley's suggestion four male abdomens were sent to Brian Goodey for dissection. The male genitalia are figured here (Plate 8). The broadly triangular uncus with straight posterior margin readily distinguishes it from any other British *Clepsis* species. A female was captured on 8 June and also sent to Brian for genitalia dissection (Plate 9). The female genitalia differ from other *Clepsis* species in the combination of the presence of a short sclerotization in the ductus bursae and signum not capitate.

Distribution

Clepsis dumicolana is a southern European species currently expanding its range into central and northern Europe, probably imported with its food plant *Hedera helix*. According to Razowski (2002) it is a southern European species, recorded from Spain to Sardinia and Sicily, although the specimen he illustrates is from Croatia, and outside Europe from Syria and Lebanon. Since then it has also been reported from Switzerland, Austria, Germany (Hausenblas, 2006, 2007), The Netherlands (Muus & Corver, 2008) and Belgium (De Prins & Steeman, 2008). Aarvik (2013) adds mainland Italy and Slovenia, but does not mention Croatia.

Plate 7. Pupa probably of *Clepsis dumicolana* (Photograph by Pedro Pires)

Plate 8. Larval activity probably of *Clepsis dumicolana* (Photograph by Pedro Pires)

Plate 9. Genitalia of male *Clepsis dumicolana* (Preparation and photograph by Brian Goodey)

Plate 10. Genitalia of female *Clepsis dumicolana* (Preparation and photograph by Brian Goodey)

Biology

The biology of this species in Britain is as yet hardly known. According to both Spuler (1910) and Razowski (2002) the caterpillar feeds exclusively on the leaves of Ivy *Hedera helix*. No other food-plant is recorded. Bred indoors, the moths emerge in March (Seliger et al., 2008). In the wild the adult moth has been recorded from May to July (Razowski, 2002) and August to September (De Prins & Steeman, 2008) and also October (Seliger et al. 2008) suggesting the probability that two generations occur. Despite the probable preference for south-facing sites (Seliger et al., 2008), the wall at the Royal Brompton Hospital where the *Clepsis dumicolana* is found faces east-north-east, directly toward the sunrise. This may help to raise the body temperature as soon as possible after the usual cold nights of May.

Conclusions

C. dumicolana is evidently a new arrival in Britain, perhaps through the horticultural trade. The numbers seen suggest that it must be breeding at the Royal Brompton site.

Acknowledgements

Grateful thanks are due to Martin Corley and Jim Porter for their help in preparing this paper and their corrections and most especially to Brian Goodey for his skilful dissection of the genitalia and superb photography resulting in the genitalia pictures shown.

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A rare aberration of Six-spot Burnet: *Zygaena filipendulae* (L.) (Lep.: Zygaenidae) f. *chrysanthemi* Borkhausen, 1789, found in North Staffordshire

This rare form of the Six-spot Burnet moth was found by myself in a local meadow, next to the area of woodland known as Dark Wood, Clayton, Staffordshire (O.S. grid reference SJ 857431), during August 2012. It was feeding at Knapweed (*Centaurea*) along with two other examples of normal colouring. The appearance of the moth was fresh, not 'tired' or 'old' and the colour was similar to the Forester moth *Adscita statices* (L.), metalic green but with the addition of six dark spots on each wing.

Plate 1. *Zygaena filipendulae* (L.) (Lep.: Zygaenidae) f. *chrysanthemi* Borkhausen, female, Dark Wood, Clayton, Staffordshire, August 2012.

Dr W. G. Tremewan has kindly commented that "the sheen on the ground colour of Burnet moths is different from that found in Forester moths, although both are produced by refractive light. The Staffordshire specimen is a female and in this sex the sheen is always stronger than that found in the male – of course, it also depends on the population. This is an extremely rare morph of *Zygaena filipendulae* (Linnaeus, 1758) and is known as *chrysanthemi* (Borkhausen, 1789); in fact, it is one of the rarest colour morphs to be found in Burnet moths. Its rarity is considered to be due to the selective elimination of a genotype that is carrying alleles that reduce fitness. For details of the Mendelian genetics of this rare morph, see Tremewan (1985. *Entomologist's Gazette* **47**: 21-15 and Tremewan (2006. *Ecology, Phenotypes and the Mendelian Genetics of Burnet Moths*, *Entomologist's Gazette* **47**: 219-223.)" No further sightings have been made at subsequent visits to this location.

I am most grateful to W. G. Tremewan, who is widely acknowledged as the foremost authority on the Zygaenidae, for his interesting and helpful comments. I would also like to thank Andrew Cooper for his help and advice.

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Moss on the ground: a hiding place for some arboreal feeding microlepidoptera

On 18 May 2014 we were examining an extensive amount of moss on the ground in a field near Langmere, Norfolk and were surprised to discover, amongst this, adults of three species of microlepidoptera, all of whose larva mine leaves of oak *Quercus* spp. These were *Tischeria ekebladella* (Bjerkander) (Tischeriidae), *Phyllonorycter harrisella* (Linnaeus) and *P. kuhlweiniella* (Zeller) (both Gracillariidae); we found one individual of each species.

There was only one oak tree in the field; however the moths were not found immediately below this tree, but up to about 20 metres away. There were several oak trees in a nearby field that were at least 100 metres away. None of the moths was simply resting on the surface of the moss. All were below the surface and were only found whilst carefully parting the moss as we were looking for larvae.

The field had little vegetation much taller than the moss. Although over the years when searching on the ground amongst moss or other low-growing plants we have found adults of Microlepidoptera whose larvae feed on such plants, we had never previously come across those whose larvae feed on leaves of trees. The weather on the day was warm and comparatively still as it had been the previous day or so. Thus it seems unlikely that the moths had been driven to find shelter on the ground through adverse weather conditions but that they had 'chosen' to hide amongst the moss.

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Aberrant form of Riband Wave *Idaea aversata* (L.) (Lep.: Geometridae) in Northumberland

A striking form of the Riband Wave *Idaea aversata* was caught in a 125 watt mv Robinson-pattern trap at Uplands, Monkseaton, South Northumberland (VC 67; O. S. grid reference NZ 338723) by M. S Hodgson, on the night of 9 July 2014 (Plate 1).

Riband Wave is a common moth in Northumberland, as it is elsewhere throughout almost all of the British Isles other than the Outer Hebrides and Shetland (see distribution map in Hill, Randle, Fox & Parsons, 2010. *Provisional Atlas of the UK's Larger Moths*. Butterfly Conservation). It is well-known in both the typical form, which has a dark fascia across each wing and as the plain, un-banded form *remutata* Linnaeus, but this present example is quite unlike either. Martin Honey of the Natural History Museum, London, has kindly informed me that this specimen conforms to ab. *suffumata* (Lambillion, 1909).

Plate 1. Aberrant form of Riband Wave *Idaea aversata* (L.). Northumberland, 9 July 2014, leg. M. S Hodgson. (Photograph by T. J Tams)

A similar, unicolorous form of this species was recorded in Sussex on 15 July 2013 by Bob Eade (see *http://bobsbutterflies.blogspot.co.uk/2013/11/july-16th-part-2-moth-trap-and-sussex.html*). The Northumberland specimen is retained in my own collection.

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SHORT CONTRIBUTION ON THE EARLY SPRING MACROLEPIDOPTERA OF THE REPUBLIC OF MACEDONIA WITH A REPORT OF TWO NEW GENERA AND FOUR NEW GEOMETRIDAE SPECIES FOR THE COUNTRY

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Abstract

Boudinotiana notha (Hübner, 1803*), Boudinotiana puella mediterranea* Ganev, 1984, *Desertobia ankeraria* Staudinger, 1861 and *Agriopis leucophaearia* ([Denis & Schiffermüller], 1775) are reported for a first time from the Republic of Macedonia. The genera *Boudinotiana* (=*Archiearis* = *Brephos*) and *Desertobia* (=*Erannis* auct.) are also new for the country. One aberrant of *Eriogaster rimicola* ([Denis & Schiffermüller], 1775) with unusual flight period is reported. These and some other interesting species are reported and illustrated.

Keywords: Lepidoptera, Geometridae, Lasiocampidae, Noctuidae, aberants, Macedonia, new records.

Introduction

The fauna of the Republic of Macedonia is without doubt very rich and interesting, because of both the geographical position of the country and its physical geography. The fauna of butterflies and skippers is well enough explored and in recent years several local lepidopterists have published articles, with several new species and records for the country. The nocturnal Lepidoptera fauna of Macedonia is, on the other hand, poorly explored and finding a new species for the country is still very easy. Since the collapse of the former "Iron Curtain", access to other countries after years of being denied travel outside the communist union has meant that Macedonia has been largely neglected in recent decades; prior to this, contemporary taxonomic achievements were not implemented and many complexes of species were not investigated in line with modern taxonomy.

Research in this country is sporadic, not regular, with summer and autumn species better explored. Early spring research is sparse and this explains why widespread species such as *Agriopis leucophaearia* ([Denis & Schiffermüller], 1775) have not been found and reported until now! The present authors specifically selected the first good, early spring days with the particular intention of looking for *Boudinotiana puella mediterranea* Ganev, 1984, *Desertobia ankeraria* Staudinger, 1861 and *Chemerina caliginearia* (Rambur, 1833) – all species known and well presented in Bulgaria, inhabiting areas not far away from the border with Macedonia. *Chemerina*

caliginearia was not found, although there are suitable habitats for it at the Demir Kapiya site. The first two species were found in two localities and several other species new for the country were also encountered. In the limited available time of three days and two nights, the authors could not find the third species of *Boudinotiana* known from the Balkans, which without any doubt is present in Macedonia; nor was it possible to establish the real status of the new species in the country, although they seem to be widely distributed.

Lasiocampidae

***Eriogaster rimicola* ([Denis & Schiffermüller], 1775)**

Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24'12.6"; E022°17'19.2", 08.iii.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, *Platanus orientalis*, S. Beshkov & V. Gashtarov leg. at lamps and light traps, one male specimen. This specimen (Plate 1, Fig. 1) has incompletely developed hind wings and the forewings have a black elongate discal spot, not the round, white spot exhibited by the typical form. The spring appearance of this late autumn species is surprising. Perhaps low temperatures during the over wintering of the pupa are the reason for the black coloration of the discal spot.

Geometridae

***Eupithecia quercetica* Prout, 1938 (= *buxata* Pinker, 1958)**

Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24'12.6"; E022°17'19.2", 08.iii.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, *Platanus orientalis*, S. Beshkov & V. Gashtarov leg. at lamps and light traps (Plate 1, Fig. 2) in large number. *Buxus sempervirens* which is known as a food plant of this species is well presented in this locality. *Eupithecia quercetica* seems not to be rare in Macedonia (and Southern and South-Eastern Balkans). It is little known there, because of its early flight period and the lack of researchers.

***Boudinotiana notha* (Hübner, 1803)**

Skopie Region, Treska Gorge, near Glumovo Village, 279m, N41°59'19.8"; E021°19'04.1", 10.iii.2013, *Populus alba* forest near river, S. Beshkov & V. Gashtarov leg. during daytime (Plate 1, Fig. 3). New genus and a new species for the Republic of Macedonia. We explored this site searching for *Boudinotiana puella mediterranea*, found in two sites on the previous two days, but that species was not found, although its presence there seems very possible. Without any doubt *Boudinotiana notha* will be found in many other localities in the country.

***Boudinotiana puella mediterranea* Ganev, 1984**

Strumitza region, between Kosturino Village and the crossroad to Tri Vodi Village, 421m, N41°22'03.9"; E022°36'14.8", 08.iii.2013, *Populus alba* near stream in meadow, S. Beshkov & V. Gashtarov leg. during daytime, two males and one female;

Macedonia, middle Vardar river
Valley, near Demir Kapyia,
130m, N41°24'13"; E022°17'19"
Maquis, 08.III.2013, S. Beshkov
& V. Gashtarov leg. at lamps

Fig. 1. *Eriogaster rimicola*, male aberrant from early spring.

Macedonia, middle Vardar river
Valley, near Demir Kapyia,
130m, N41°24'13"; E022°17'19"
Maquis, 08.III.2013, S. Beshkov
& V. Gashtarov leg. at lamps

Fig. 2. *Eupithecia quercetica*, female.

Fig. 3. *Boudinotiana notha*, male.

Macedonia, Babuna river in
its flow in Vardar near Veles,
161m, N41°41'14"; E021°48'24"
09.III.2013, S. Beshkov
& V. Gashtarov at a day time

Fig. 4. *Boudinotiana puella mediterranea*, male.

Plate 1.

Macedonia, middle Vardar river
Valley, near Demir Kapyia,
130m, N41°24'13"; E022°17'19"
Maquis, 08 III 2013, S. Beshkov
& V. Gashtarov leg.

Fig. 1. *Lycia graecarius*, female from Demir Kapiya.

Macedonia, middle Vardar river
Valley, near Demir Kapyia,
130m, N41°24'13"; E022°17'19"
Maquis, 08 III 2013, S. Beshkov
& V. Gashtarov leg. at lamps

Fig. 2. *Desertobia ankeraria*, male, Demir Kapiya.

Fig. 3. *Desertobia ankeraria*, male, Gorna Matka.

Fig. 4. *Phigaliohybernia marginaria* ,male, Bulgaria, Kozhouh.

Fig. 1. *Phigaliohybernia aurantiaria*, male, Bulgaria, Levunovo.

Fig. 2. *Erannis defoliaria*, male, Bulgaria, Sofia.

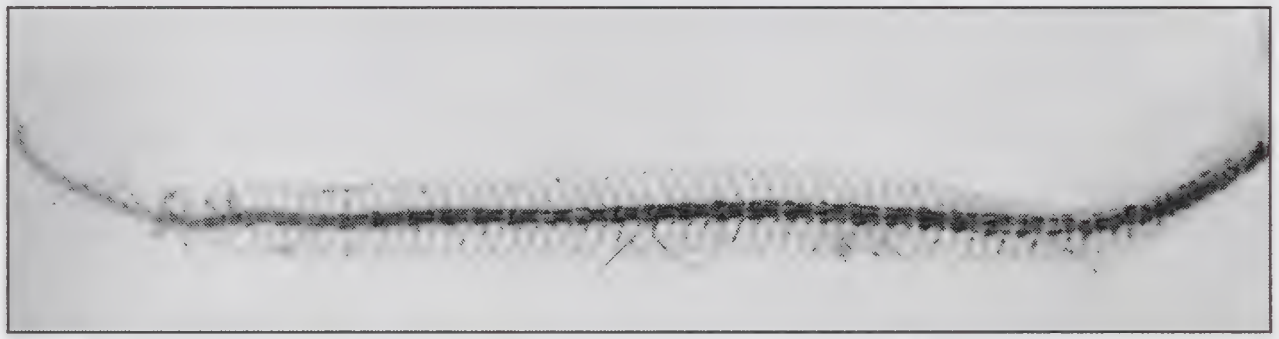

Fig. 3. *Desertobia ankeraria*, male antenna, Gorna Matka.

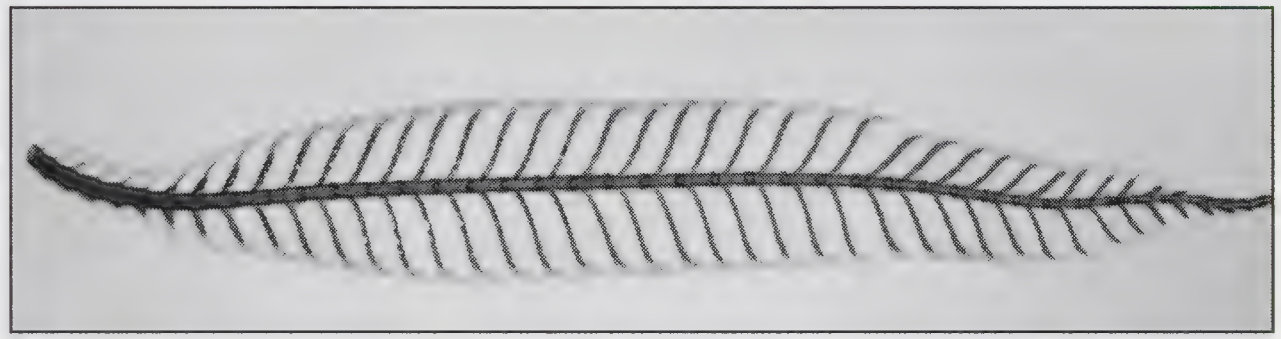

Fig. 5. *Phigaliohybernia aurantiaria*, male antenna, Bulgaria Kmetovtzi near Gabrovo.

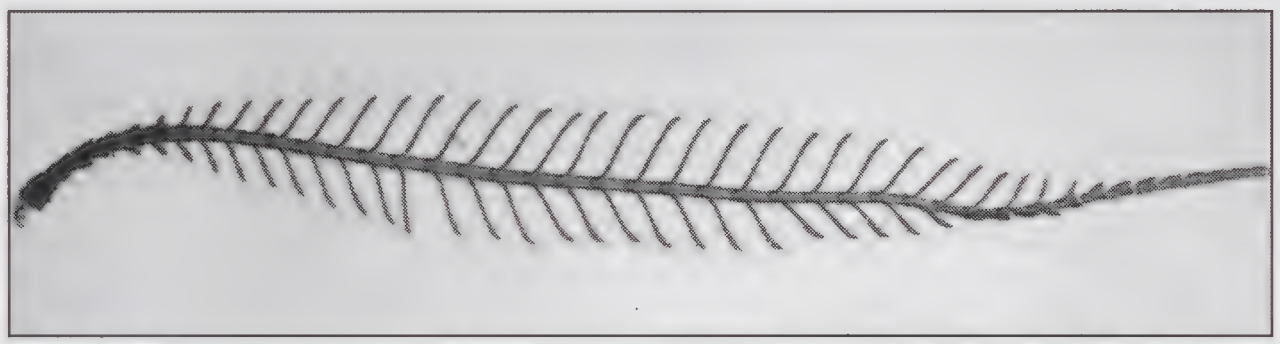

Fig. 4. *Phigaliohybernia marginaria*, male antenna, Bulgaria, Kozhouh.

Fig. 6. *Erannis defoliaria*, male antenna, Bulgaria, Sofia.

Plate 3.

Plate 4. Habitat of *Boudinotiana puella mediterranea* near Veles.

Plate 5. Habitat of *Desertobia ankeraria*, Goma Matka.

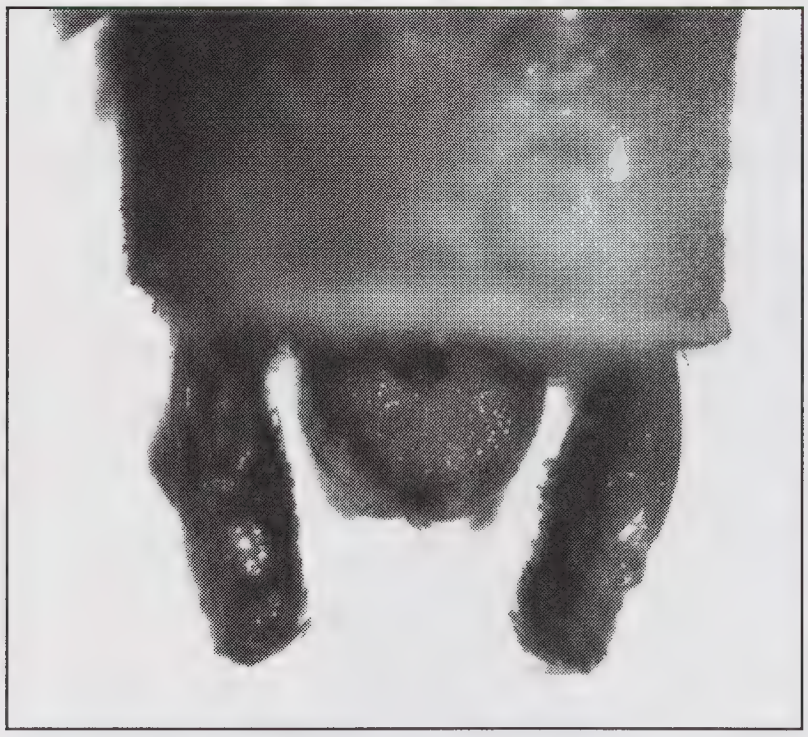

Fig. 1. *Desertobia ankeraria*, male genitalia, dorsal view, Gorna Matka.

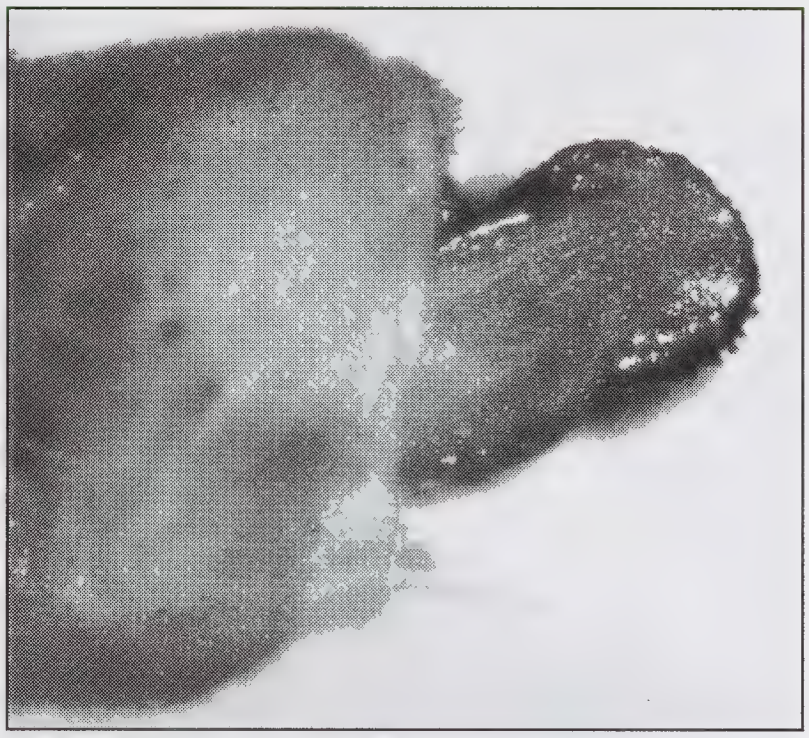

Fig. 2. *Desertobia ankeraria*, male genitalia, lateral view, Gorna Matka.

Fig. 3. *Phigaliohybernia marginaria*, male genitalia, dorsal view, Bulgaria, E Rhodopi, Studen Kladenetz.

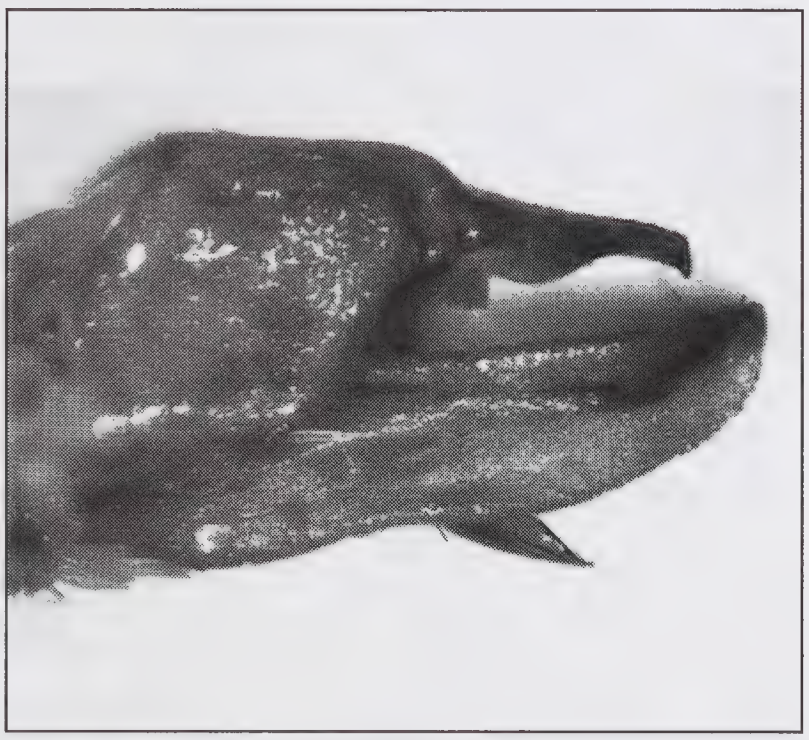

Fig. 4. *Phigaliohybernia marginaria*, male genitalia, lateral view, Bulgaria, E Rhodopi, Studen Kladenetz.

Fig. 5. *Phigaliohybernia aurantiaria*, male genitalia, dorsal view, Bulgaria, Levunovo.

Fig. 6. *Phigaliohybernia aurantiaria*, male genitalia, lateral view, Bulgaria, Levunovo.

Plate 6.

Fig. 1. *Erannis defoliaria*, male genitalia, dorsal view, Bulgaria, Sofia.

Fig. 2. *Erannis defoliaria*, male genitalia, lateral view, Bulgaria, Sofia.

Plate 7.

Macedonia, middle Vardar river
Valley, near Demir Kapyia,
130m, N41°24'13", E022°17'19"
Maquis, 08.III.2013, S. Beshkov
& V. Gashtarov leg. at lamps

Plate 8. *Lithophane ledereri*, male, Demir Kapiya.

Middle Vardar river valley near Veles Town, Babuna river in its flow in Vardar, 161m, N41°41'14.3"; E021°48'24.1", 09.iii.2013, galleries of *Populus alba* (Plate 1, Fig. 4), S. Beshkov & V. Gashtarov leg. (Plate 1, Fig. 4). New species for Macedonia. Without any doubt one more species of this genus – *Boudinotiana parthenias* (Linnaeus, 1761) will be in Macedonia.

***Lycia graecarius* (Staudinger, 1861)**

Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24'12.6"; E022°17'19.2", 08.iii.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, *Platanus orientalis*, S. Beshkov & V. Gashtarov leg. Males are well attracted to artificial light, but females (Plate 2, Fig. 1) are wingless and can be find during the day at rest on stones.

***Agriopis leucophaearia* ([Denis & Schiffermüller], 1775)**

Skopie Region, Treska Gorge, near Gorma Matka Village, 455m, N41°58'18.0"; E021°17'50.1", 09.iii.2013, *Quercus, Juniperus*, S. Beshkov & V. Gashtarov leg. at lamps and light traps. New species for the Republic of Macedonia. It seems not to be rare in Macedonia, and perhaps is not reported before because of its early flight period or even because of confusion with *Agriopis bajaria* ([Denis & Schiffermüller], 1775). Even in bad condition both species can be easy split by the male antennae – in *Agriopis bajaria* they have much longer lamellae.

***Desertobia ankeraria* Staudinger, 1861**

Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24'12.6"; E022°17'19.2", 08.iii.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, *Platanus orientalis*, S. Beshkov & V. Gashtarov leg. at lamps and light traps (Plate 2, Fig. 2), seven male specimens; Skopie Region, Treska Gorge, near Gorma Matka Village, 455m, N41°58'18.0"; E021°17'50.1", 09.iii.2013, *Quercus, Juniperus*, S. Beshkov & V. Gashtarov leg. at lamps and light traps (Plate 2, Fig. 3), five male specimens. New genus and a new species for Republic of Macedonia. Polymorphic species; there are specimens without (Plate 2, Fig. 2) and with (Plate 2, Fig. 3) discal spots on both fore wings and hind wings. This species is reported so late for Republic of Macedonia (and Bulgaria), because of confusion with species of the genus *Phigaliohybernia: P. marginaria* (Fabricuis, 1777) (Plate 2, Fig. 4) and *P. aurantiaria* (Hübner, 1799) (Plate 3, Fig. 1) or even with *Erannis defoliaria* (Clerck, 1759) (Plate 3, Fig. 2). Males of *Desertobia ankeraria* can be easily split from all these species on the shape of the antennae. In *D. ankeraria* male antennae have much shorter lamellae (Plate 3, Fig. 3) than in *P. marginaria* (Plate 3, Fig. 4), *P. aurantiaria* (Plate 3, Fig. 5) and in *Erannis defoliaria* (Clerck, 1759) (Plate 3, Fig. 6.). The male genitalia

of *D. ankeraria* (Plate 6, Fig. 1 & 2) are also very specific – with rounder valval tips and rounded uncus, valvae reaching beyond the tip of the uncus. In *P. marginaria* (Plate 6, Fig. 3 & 4) and in *P. aurantiaria* (Plate 6, Fig. 5 & 6) the valvae are much longer with pointed apices, the uncus is more elongated and pointed. In *Erannis defoliaria* (Plate 7, Fig. 1 & 2) the uncus is pointed and extends beyond the valva tip. Line drawings of male genitalia of dissected specimens of these taxa are illustrated in Leraut (2009). Brushed male genitalia and male antennae of all these taxa are described and illustrated in Beshkov & Zlatkov (2011). Females are wingless.

Noctuidae

***Lithophane ledereri* (Staudinger, 1892)** (Plate 8)

Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24'12.6"; E022°17'19.2", 08.iii.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, *Platanus orientalis*, S. Beshkov & V. Gashtarov leg. at sugaring, more than 20 specimens. *Lithophane ledereri* has very few localities in Macedonia, but it seems not to be rare in low altitude near rivers with the larval food plant – *Platanus orientalis*. It comes to light, but is more frequent at a mixture of red wine and sugar. During the night of 8 March 2014 it was the most common species at sugar bait and was even more numerous than other species attracted at light.

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Coleophora conyzae Zeller (Lep.: Coleophoridae) – the male genitalia

I recently dissected a coleophorid moth recorded by James Skinner on 17 July 2013 at Kelmarsh Hall and gardens, Northamptonshire. I could not match the male genitalia slide with any of the images in Emmet *et al* (1996. *Moths and Butterflies of Great Britain and Ireland* Volume 3, Harley Books) and so I forwarded images of the moth and my microscope slide to John Langmaid, who referred me to Hugo van der Wolf for a further opinion. Mr van der Wolf confirmed that the moth was *Coleophora conyzae* Zeller. He also stated that the drawing in *Moths and Butterflies of Great*

Plate 1. Male genitalia of *Coleophora conyzae* Zeller.

Britain and Ireland "is not very good". In that work, the male genitalia of this species is shown at figure 42 (c) on page 165. I have noticed that this image is identical to those in two papers by Sergiusz Toll – in 1952 (*Family Eupistidae (Lepidoptera) of Poland.* Documentia Physiographica Poloniae **32:** Tabl. VI fig. 49) and 1962 (*Materialien zur Kenntnis der paläarktischen Arten der Familie Coleophoridae (Lepidoptera).* Acta Zoologica Cracoviensia **VII:** Tafel 11 M fig. 72). All of these images are incorrect for *Coleophora conyzae* Zeller.

One of my own images of my male genitalia slides for *Coleophora conyzae* Zeller is presented here (Plate 1). This has been enhanced by an "image-stacking" program, by a colleague, Dr. Chris Carter.

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***Euchromius cambridgei* (Zeller) (Lep.: Crambidae): the second record for Britain**

Weather conditions on 12 June 2014 suggested that a moth-trapping session in my small, north Surrey garden might produce a much better catch after a run of poor nights. Cloud cover was thick and with temperatures remaining in the high teens until midnight, the trap quickly became filled with the regulars, such as Heart & Dart *Agrotis exclamationis* (L.) and caddisflies (Trichoptera), as well as some more unusual species, notably the first garden record of Pinion-streaked Snout *Schrankia costaestrigalis* (Stephens). Returning to the trap after potting up the Snout, I noticed a small, well-marked crambid sitting on the inside of the funnel. It didn't immediately ring any bells and so I quickly potted it up. I was surprised to note that the moth exhibited a row of terminal spots as well as an iridescent fringe, features I have only previously associated with the mainland European genus *Euchromius*. After a subsequent search of the Internet, followed by correspondence with Martin Honey at the Natural History Museum and a small number of County Moth Recorders, it was concluded that the moth was *Euchromius cambridgei* – apparently only the second British Isles example.

Plate 1. *Euchromius cambridgei* (Zeller). Thames Ditton, Surrey, 12 June 2014, Bill Dykes.

Euchromius cambridgei has a circum-Mediterranean distribution, from Spain to Italy in the north and from North Africa in the south, also affecting the Mediterranean Islands. It is also reported from the Dalmatian coast at Split and across the Middle East in Arabia, Iran, Afghanistan and Pakistan (Slamka, 2008. *Pyraloidea (Lepidoptera) of Europe, volume 2: Crambinae & Schoenobiinae*. Bratislava). Its arrival in Britain is therefore rather surprising. Within its expected range adults may be found from February to November, in two generations, and although the larval pabulum is unknown the species is generally regarded as a detritivore.

This current example constitutes the second record of the species for the British Isles; the first was a single male taken in a garden at Kingsthorpe, Northamptonshire on 16 August 2005 (Sharpe & Manning. 2006. *Euchromius cambridgei* (Zeller, 1867) (Lep.: Pyralidae, Crambinae) An adventive species new to Britain. *Entomologist's Rec. J. Var.* **118**: 17-18). Although these authors considered their example to be "adventive", the true origins of these moths remains somewhat a mystery. The capture of Britain's first *Aedia funesta* (Esper) at Dungeness the following night, combined with the well recorded migration potential of the genus *Euchromius* would seem to put forward a good case for the moth being of genuine immigrant origin. The specimen has been donated to the Natural History Museum, London and will be incorporated into the national collection.

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Diplopseustis perieresalis (Walker) (Lep.: Crambidae) new to Norfolk

On 10 June 2014 I ran an mv lamp at my home in Bawdeswell, Norfolk, as I do most evenings, but this evening I struggled to put a name to one moth. It was quite similar to a brown form of *Endotricha flammealis* (D.& S.), an abundant moth here in July and early August, but it differed in a number of ways. The irregular shape of the rear of the wing was more extreme (recalling Nettle-tap *Anthophila fabriciana* (L.) a little), it had long palps, the markings differed slightly and it had a distinctive head-down posture. Eventually I identified it as *Diplopseustis perieresalis*.

This small moth was recorded on the Isles of Scilly on 19 October 2001 (Mackay & Fray, 2002. *Diplopseustis periersalis* (Walker) on Tresco, Isle of Scilly – the first record for Britain and the Western Palaearctic Region. *Atropos* **16**: 26); the mis-spelled specific epithet here is as it appears in print. It was first found on the British mainland by Graham and Jean Jarvis, in their garden at Heavitree, Devon on 4 November 2007 (Jarvis 2008. *Bull. Amateur Entomologists Society* **67**: 54-55). Since then there have been only four reported records, as follows:

Plate 1. *Diplopseustis perieresalis*, Bawdeswell, Norfolk, 10 June 2014.

Westminster, Middlesex, ix.2008 (found indoors) given in Clancy (2012. The immigration of Lepidoptera to the British Isles in 2009. *Entomologist's Rec. J. Var.* **124**: 135);

Southsea, South Hampshire, 12.ix.2010, J. R. Langmaid (Langmaid & Young, 2011. Microlepidoptera review of 2010. *Entomologist's Rec. J. Var.* **123:** 275).

Putney, Surrey, 13.vii.2010, R. Arnfield (Langmaid & Young, 2011. Microlepidoptera review of 2010. *Entomologist's Rec. J. Var.* **123:** 275).

Tiverton, Devon, 2.ix.2012, A. Cunningham (Langmaid, 2013. Microlepidoptera review of 2012. *Entomologist's Rec. J. Var.* **125**: 229).

It is an adventive species originating in Asia and Australasia although it has been speculated that the Scilly record may possibly have been a migrant from the Canaries where a population seems to have become established. That doesn't seem so likely for my record – perhaps it is more likely to have migrated from the garden centre half a mile away!

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Phyllonorycter kuhlweiniella (Zell.) (Lep.: Gracillariidae) in Norfolk in spring 2014

Careful checking of tree trunks is a technique for finding moths that I had not employed much prior to 2014, but after finding lots of *Phyllonorycter* on trunks in mid April 2014 I determined to make a more concerted effort to check trunks in future. On 23 April 2014, I visited Syderstone Common during a short lunch break. I readily located 15 *Phyllonorycter* of four species on the trunks of a clump of mature oak trees. These included two striking, but unfamiliar examples which I tentatively identified in the field as *Phyllonorycter kuhlweiniella*. Having confirmed this identification I returned later in the week to find a further 15 *kuhlweiniella*. Rob Lee also visited the site and located 40 examples over a slightly wider area than I had time to search.

This attractive species was not recorded anywhere in the UK between 1949 and 1982 when the species was discovered in southern Norfolk (Emmet, 1982. *Ent. Rec.* **94**: 119-120). Over the next 15-20 years there were several records close to the Norfolk/Suffolk border but a check of the literature and reference to web sites at *www.ukmoths.org.uk*, *www.norfolkmoths.co.uk* and *www.suffolkmothgroup.org.uk* reveal there were none in Norfolk after 1996 and none in Suffolk after 2002. I understand that leaf-mine searches have been conducted in the area since the last records, but that these were unsuccessful (Jon Clifton, personal communication).

Plate 1. *Phyllonorycter kuhlweiniella* (Zeller), Syderstone Common, Norfolk. 1. Specimen seen on 26 April 2014; 2. Specimen seen 23 April 2014.

Syderstone Common is in north Norfolk, so a considerable distance from Norfolk/Suffolk border population. I was pleased that I had discovered a new population of a nationally rare moth, but wondered whether this was an isolated population or if the species was more widespread than previously known. Events

over the next fortnight helped to answer that question. On 4 May, I checked trunks at two adjacent sites that I visit regularly near Bittering in central Norfolk and was surprised to find three more *Phyllonorycter kuhlweiniella*. Two were on a mature Copper Beech (*Fagus*) and the third was on an Alder (*Alnus*). There are oaks in this area, but relatively few and the majority are not very mature. The next day I discovered two more on the same Copper Beech, and a third among numerous *Phyllonorycter joannisi* (Le Marchand) on a stand of Norway Maple (*Acer platanoidella*). That afternoon I visited Honeypot Wood, also in central Norfolk, and immediately located three more on the first couple of oak (*Quercus*) trees I checked.

The following day I tried two more sites in central Norfolk, but across the vice-county border into East Norfolk, vice county 27 (the previous sites were all West Norfolk, VC 28). I was unsuccessful at the first site, but at Whitwell Common I counted 71 *Phyllonorycter kuhlweiniella*. The vast majority were on two smallish and relatively isolated oak trees and the remaining few were in a larger clump of oaks.

In addition to my own records, I am aware of a number of other records from 2014. These include two individuals that came to light in Dersingham, West Norfolk (Dick Jones), a record from Bradfield Woods in southern Suffolk (per Jon Clifton) and even further away, one was photographed in Bedfordshire (*www.ukmoths.org.uk*, accessed 9 July 2014). There may be others that I am not aware of. Together these records confirm that my initial find did not represent a new (or newly-discovered) but isolated population. Rather the species must be distributed over a much wider area, albeit presumably in relatively low density. It seems that spring 2014 was a good one for several *Phyllonorycter* species, at least locally, and this will have undoubtedly contributed to so many *kuhlweiniella* being found in this year.

It seems that many recorders wishing to find *Phyllonorycter* species look for their leaf-mines, and indeed for some species where the identification of adults is difficult that is surely the best way. However my experience in 2014 suggests that for the more recognisable species at least, searching for adults on tree trunks may prove a very easy way of recording them. All of the individuals I recorded were at a height above ground that was easily visible when standing next to the trunk and the pattern of *kuhlweiniella* (Plate 1) makes this species particularly easy to spot.

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Subilla confinis (Stephens) (Raph.: Raphidiidae), a snake fly new to Bedfordshire

On 19 May 2014, I was formally appointed the new Lacewings and Allies Recorder for VC30 (Bedfordshire) by the Bedfordshire Natural History Society. Just ten days later, on 29 May 2014, Colin Le Boutillier swept a female *Subilla confinis*, from flowering umbellifers at Chalton Spinney (also known as Fancott Wood) and forwarded the record to me. He had identified it using Plant (1997. *A key to the adults of British lacewings and their allies*. Field Studies Council). With literature available to me at the time, I found that it had probably not been recorded in the county before and so I contacted Colin to see if he still had the specimen, which he had set and the following week he kindly brought it over to me. I also went through the aforementioned key and came to the same conclusion over its identity, which was confirmed by Jason Chapman (the previous County Recorder) from a photograph of the set specimen. Jason also confirmed that he knew of no other previous records, and that *Subilla confinis* completed the "set" since the other three British species of Raphidoptera had already been recorded in Bedfordshire.

Plate 1. *Subilla confinis* (Staples), female. Charlton Spinney, Bedfordshire, 29 May 2014.

The specimen has been retained, currently in my possession and will be incorporated into the county collection. Subsequently, on 30 June 2014, I found another female *Subilla confinis*, which was beaten off oak at Baker's Wood SSSI, near Heath & Reach, also in Vice County 30. This was a bonus find, having been beating for Lepidoptera larvae at the time.

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An unusual Treble Lines *Charanyca trigammica* (Hufn.) (Lep.: Noctuidae)

Paul Eels, the warden at RSPB Titchwell Nature Reserve in North Norfolk, passed to me an unusual looking medium sized noctuid moth, taken on 22 June 2014. It turned out to be a male Treble Lines *Charanyca trigrammica* (Hufn.) (Plate 1) resembling a cross between the ab. *semifuscans* and *obscura* where the sandy ochreous ground

Plate 1. *Charanyca trigrammica* var. Titchwell, Norfolk, 22 June 2014, leg. P. Eels, in coll. J. Clifton.

colour was met by a dark grey brown broad terminal band. No hint of a median fascia existed although the ante-median fascia was still present. The specimen was set and has been retained in the collection of the author.

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Eupithecia egenaria H.-S. (Lep.: Geometridae), Fletcher's Pug or Pauper Pug new to Bedfordshire

A worn, greyish pug attracted to mv light at the RSPB headquaters at Sandy, Bedfordshire on 29 May 2014 was found to be a male *Eupithecia egenaria* on dissection.

A trap been set up in the garden overnight, which has several, mature Common Limes *Tilia* x *europea* (a known foodplant for the pug in other areas of the country) in the vicinity. Dave Buckingham collected a few pugs amongst others in the morning and took them for dissection; he discovered a Fletcher's (or Pauper) Pug was amongst

them later in the day. My husband Andy (joint County Macro-moth Recorder with myself) confirmed the identity from a slide made of the genitalia. Interestingly, a second individual was trapped the following night during a moth identification course run by Dave Grundy at the same location, who has retained it for confirmation. DG is very familiar with the species, particularly in the West Midlands area.

The species had been somewhat expected in the county since Dave Wilton trapped one at Rammamere Heath, just over the border in Buckinghamshire (VC24) in May 2011. The nearest limes are in King's Wood (Heath & Reach) in VC30, which has some good stands of coppiced Small-leaved Lime *Tilia cordata* (the pug's main foodplant). Andy and I ran mv lights near one lot of limes here four times in 2012, during the flight period, but without success. However, it should be noted that May was particularly cold in 2012 and June was not a lot better. In fact 2012 was not a good year overall for moths in the county. Unfortunately, we did not manage to trap at the site in 2013.

There are also coppiced Small-leaved Limes in Chicksands Wood and are hoping to catch up with the species there – either searching for larvae later in the year or trapping next spring. As far as I am aware there are no previous records of *Eupithecia egenaria* in the county and so this is a new addition to the VC30 list.

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Leucania obsoleta (Hb.) (Lep.: Noctuidae), Obscure Wainscot: the first confirmed record for North Wales

Whilst on holiday in north Wales in July 2013, my husband Andy and I asked for permission to run a light-trap at The Royal Society for the Protection of Birds' nature reserve at Conwy. This was kindly given by warden Sarah Money (SM), and on 17 July 2013 we set up an 125 watt mv lamp and sheet near an area with reeds and a number of different tree and shrub species. Amongst various wainscot specimens that appeared on and around the sheet, were five which we recognised as Obscure Wainscot. The species is familiar to us, as we had trapped it at two sites in Bedfordshire in recent years, though we were not expecting to trap it at Conwy.

The following day Andy checked the status of Obscure Wainscot on the online North Wales Lepidoptera database (*http://trawsgoed.com*) that is run by Andrew Graham (AG), the County Moth Recorder for Merionethshire (VC48). There was a reported example from Flintshire (VC51) in 2007 but this was not supported by a specimen or photograph so has not been accepted at present (AG pers comm). A photograph of one specimen from RSPB Conwy was sent to AG and Justin Williams the Denbighshire (VC50) and Flintshire (VC51) Macro-moth Recorder for confirmation. The identification was accepted and our record from 2013 is considered the first confirmed from North Wales.

RSPB Conwy lies just inside the north-western boundary of VC50. It consists mostly of land created using the silt, mud and sand from the dredging of a large trench across the bottom of the river Conwy. This was required to accommodate the concrete tunnel that now carries the A55 underneath the river. The reserve was formally opened in 1991 and has a significant area of reedbed.

According to Hill, Randle, Fox & Parsons (2010. *Provisional Atlas of the UK's Larger Moths*), the nearest records appear to be in Cheshire. On *rECOrd* (a Biodiversity Information System online database for Chesire, Halton, Warrington and Wirral) there are two records from 2007 in OS grid square SJ37, which is just north of Chester and on the Welsh border.

Subsequently the species has been caught at RSPB Conwy in 2014 on more than one occasion (SM pers comm).

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Odonestis pruni (Linnaeus, 1758) (Lasiocampidae: Pinarinae, Odonestini), the Plum Lappet new to Britain

On the evening of Tuesday 15 July 2014 I received an e-mail message from a birding friend, Hugh Bradshaw, with a photograph as an attachment. At 17.50 hours that afternoon his wife Sarah Elliott and daughter Beatrice were walking down Mount Ararat Road on Richmond Hill in south-west London (VC 17: Surrey), when they

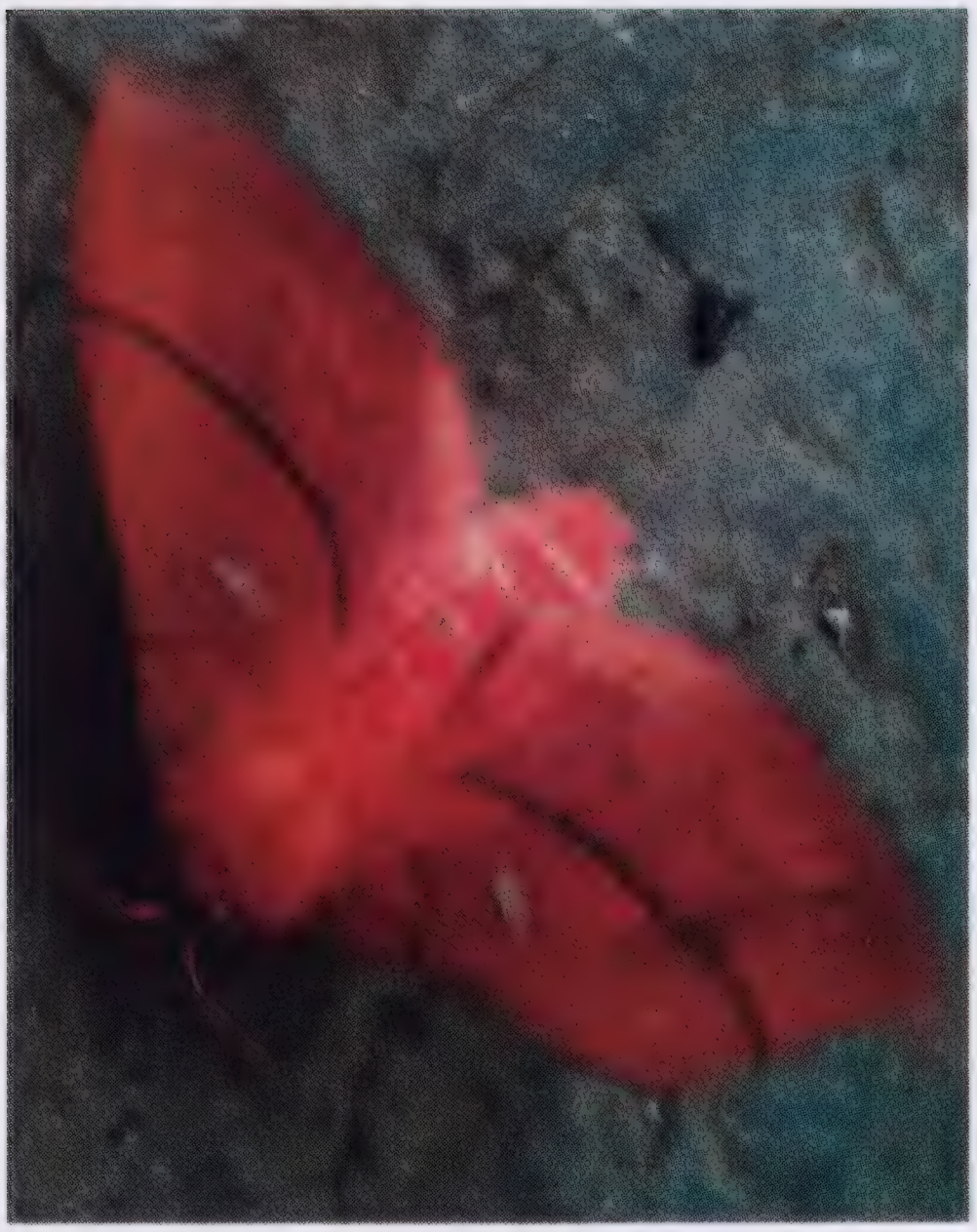

Plate 1. *Odonestis pruni* (L.) Richmond Hill, Surrey, 15 July 2014.

noticed a large colourful moth being attacked by a wasp (*Vespula* sp.) on the curb. They scared the wasp away and the moth continued to vibrate its wings violently for a minute or two, then flew onto their daughter before taking off, gaining altitude and then landing in a tree in a nearby front garden.

There is nothing particularly unusual about a wasp attacking a moth, but what was unusual was the identity of the moth. It was a fresh specimen of the Plum Lappet, *Odonestis pruni* (Linnaeus, 1758), and represents the first British example of that species (Plate 1). Unfortunately, the photograph (plus one other) is the only evidence and there is no voucher specimen. However, it is such a distinctive species that there is no doubt about its identity.

The only question is 'how did it get there?'. According to de Freina & Witt, 1987. *Die Bombyces und Sphinges der Westpalaearktis (Insecta, Lepidoptera). Volume 1.* Edition Forschung & Wissenschaft Verlag: München) it occurs throughout mainland Europe, including northern France and Denmark (but with the exception except Scandinavia and southernmost Iberia). The Fauna Europaea website adds Sweden and Finland. It is found up to 1400 metres in floodplain woods and orchards, on calcareous soils. The larvae feed on plum and blackthorn (*Prunus*), pear (*Pyrus*), oak (*Quercus*) lime (*Tilia*), birch (*Betula*), alder (*Alnus*), elm (*Ulmus*) hawthorn (*Crataegus*), Goat Willow (*Salix*), Buckthorn (*Rhamnus*) and other deciduous trees.

Despite a reasonable amount of immigrant activity in southern Britain at the time, I think one should assume that it was an adventive, rather than an immigrant, perhaps brought back to the UK inadvertently by a local resident. It already has an English vernacular name but, if one accepts that it was probably an adventive, then it should have the number 66.0121 according to the new *Checklist of Lepidoptera*.

MARTIN R. HONEY

Scientific Associate

Division of Insects, Department of Life Sciences, Natural History Museum, London SW7 5BD

EQUIPMENT APPEAL

The Editor is keen to obtain a small quantity of 125 watt MBU moth trap bulbs. These are the old, round bubs, usually with three bayonet pins, that came as standard with Robinson-pattern traps in the 1970s and 1980s. 80 watt MBU bulbs are also required if at least one starter unit (choke) is also available. Screw thread versions (if these were ever made?), are acceptable, but check that they are MBU and not the currently used MBFU type (the information should be printed somewhere on the bulb).

Perhaps you have given up collecting? Or know someone else who has? Or perhaps there is someone who had lots of traps but now only uses one or two? Put the bulbs to good use … I need 20. Sensible price paid or a donation made to a wildlife charity if you prefer.

I might also be interested in some other items of unwanted moth trap equipment. This is because I sometimes get requests from younger people and others who cannot afford to buy the full set. Just occasionally, I feel motivated to help bring a promising new talent into the science. Traps and other equipment might, in such circumstances, be issued on long term loan on the condition that moth records are submitted to the appropriate County Moth Recorder.

Please contact me by telephone, e-mail or post if you can help with any of the above.

COLIN W. PLANT

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Noctua orbona (Hufn.) (Lep.: Noctuidae), Lunar Yellow Underwing and *Tetheella fluctuosa* (Hb.) (Lep.: Drepanidae), Satin Lutestring: the first confirmed records for Bedfordshire

Between 1936 and 1981 there had been 15 reports of Lunar Yellow Underwing in VC30. In 2010, a review was carried out on its status in the county and it was decided to remove the species from the county list as there were no *verified* records. No specimens had been seen from this period and there was some doubt and confusion regarding identification. It was with great surprise then, that a probable Lunar Yellow Underwing was reported by email to my husband Andy and myself, as joint County Macro Recorders). This moth had come to light at Potton on 30 May 2014 (Fiona and Robin Wynde). The report was accompanied by photographs that looked quite convincing. Robin Wynde passed us the specimen in order to check the hindwings. The moth looked a good candidate for this species and the identity was confirmed by Richard Walker (VC59), Colin Plant (VC20 & 21) and Tony Prichard (VC25 & 26). This now becomes the first confirmed record for VC30.

Another surprise was a single Satin Lutestring that came to mv light at Flitwick Moor on 6 June 2014. This was a chance find, as Andy and I were not supposed to be trapping there that night. We had planned a Bedfordshire Moth Group meeting to

Chicksands Wood, but had to change venue at the last minute. It came in late to the lamp and sheet in the car park and only the Recorders got to see it. Andy and I had seen this species in north Wales over the last few years and recognised it immediately.

Arnold, Baker, Manning & Woiwod (1997. *The Butterflies and Moths of Bedfordshire*) note that a Satin Lutestring was recorded in Colonel S H Kershaw's notebook at Aspley Heath on 7 May 1934. Arnold considered the date to be rather early and commented that no specimen had been seen. This record has not been accepted by us as the current Macro-moth Recorders and so the 2014 record becomes the first confirmed for VC30.

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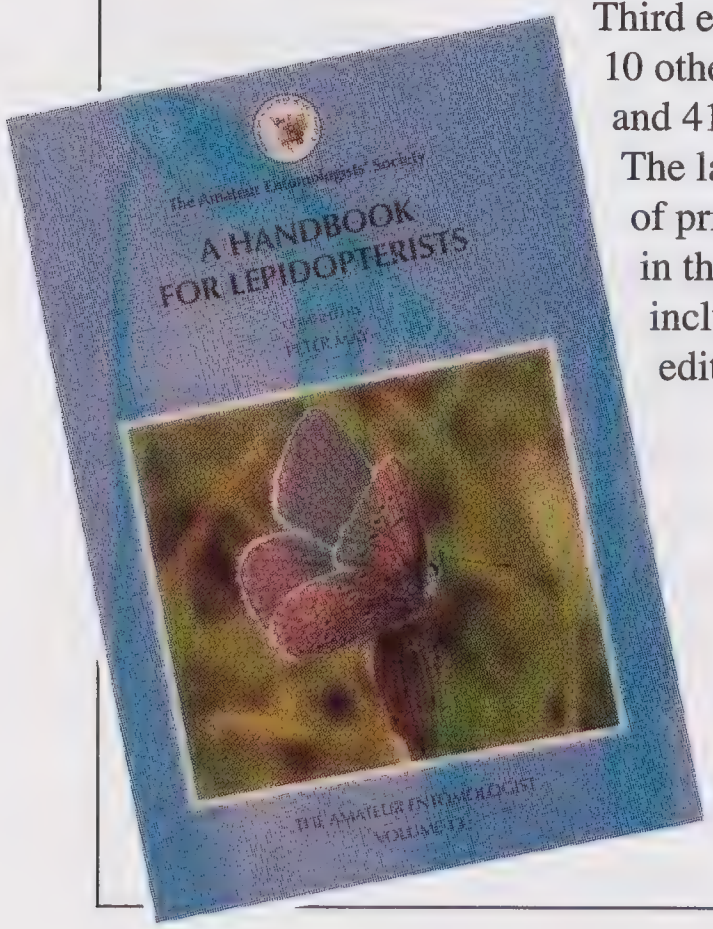

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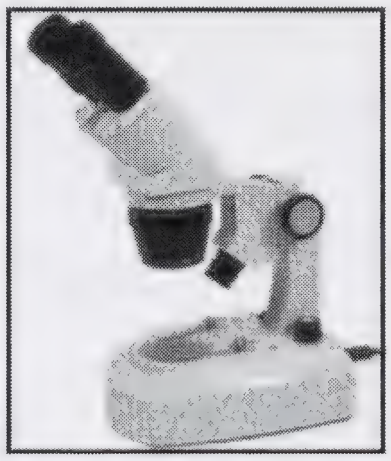

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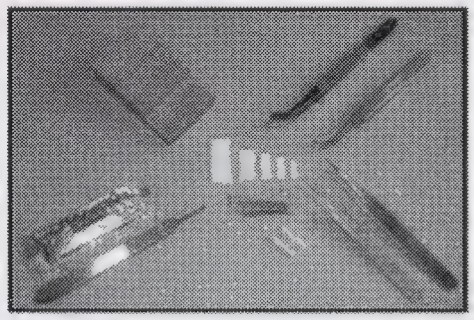

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Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

CHOREUTIS NEMORANA (HÜBNER, 1799) (LEP.: CHOREUTIDAE), A NEW ADVENTIVE SPECIES TO THE BRITISH ISLES

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Abstract

Choreutis nemorana (Hübner, 1799) (Lep.: Choreutidae), is reported as a new species for Britain, from London, where it was reared from a fig tree *Ficus carica* L. in July 2014.
Keywords: *Choreutis nemorana*, Choreutidae, Britain.

Introduction

On 6 July 2014, an upwardly curled leaf edge on a fig tree (*Ficus carica* L., identified by Mark Spencer) was noticed in Hyde Park, Westminster, London, at a distance looking like the spinning of a spider. Closer inspection, however, revealed that the spinning was caused by a caterpillar. The only species causing such work on a fig tree is *Choreutis nemorana* (Hübner, 1977), which is not listed in the most recent British checklist (Agassiz *et al.*, 2013); this appears to be the first report of this adventive species in the British Isles. The caterpillar was still working on tightening its future pupation chamber. The leaf was left where it was, and an inspection of it on 10 July showed that inside the pupation chamber a tough snow-white cocoon had been spun in which the caterpillar had pupated. The last larval skin was left at one edge of the cocoon. Further searching on the same tree yielded an additional pupa and two more caterpillars which were still feeding. Still more spinnings turned out to be devoid of caterpillars, but some of them showed a round hole in the centre, probably caused by predating birds. In total about 15 curled leaves were noticed. The four tenanted leaves were placed in a plastic box and kept inside at room temperature. On 16 July, the two caterpillars had pupated on another leaf they had been feeding on. The reason for this is probably the need of avoiding predation as the feeding places are quite obvious and easily detected by birds. The folded leaves are so neatly spun that the pupation chambers are hardly noticeable. A caterpillar eats about 4 cm^2 of a leaf during its entire development. On 16 July, the first adult, a female (Plate 6), emerged, and on 18 July, the second, a male (Plate 5). The black or dark brown pupal skin protrudes from the cocoon and is visible outside the leaf. The two specimens which pupated on 16 July emerged on 23 and 26 July respectively. The pupal stage lasts eight to ten days at 25°C. All four specimens are deposited in the collection of the Natural History Museum, London.

The fig tree in Hyde Park is about eight metres high and covers an area of about 12 square metres. The moth is certainly not abundant in this place, as only about 15 spinnings were observed. No other fig trees are growing in Hyde Park or in the adjacent Green Park. A fig tree with similar measurements as the one growing in Hyde Park was carefully

Plate 1. Leaf of *Ficus carica* with white spinning by an almost full-grown larva of *Choreutis nemorana*.

Plate 2. Leaf of *Ficus carica* with opened spinning of full-grown larva of *Choreutis nemorana*. Inset: the same larva enlarged showing the black dots on thoracic and abdominal segments.

Plate 3. Leaf of *Ficus carica* with folded leaf edge under which a larva of *Choreutis nemorana* has spun its cocoon. The rest of the leaf is untouched.

Plate 4. Opened spinning by *Choreutis nemorana* showing the outer pupation chamber and the boot-like cocoon. The adult has emerged leaving part of the pupal skin protruding from the under part of the cocoon.

examined in Kew Gardens on 20 July, but no leaf mines, folded leaf edges, or other kind of traces left by *Ch. nemorana* could be found. A close inspection of the original tree in Hyde Park on 17 August yielded two spinnings with almost full-grown larvae (Plates 1 & 2) and two folded leaves (Plates 3 & 4) with pupae. All these were left for the population to build up.

In the British Isles two other *Choreutis* species occur (Agassiz *et al*., 2013). The widely distributed *Choreutis pariana* (Clerck, 1759), known as the Apple leaf skeletonizer moth, occurs in England, Scotland, Wales and the Channel Islands and its caterpillar lives mainly on apple trees *Malus* spp. It also occurs on other Rosaceae plants and lives in the same way as *Choreutis nemorana*. In some years, it can be locally common when it can be a pest (Kimber, 2014). The much rarer *Choreutis diana* (Hübner, 1822) has only been observed in Inverness-Shire, at Glen Affric, living on birch *Betula* spp. (Kimber, 2014). This latter species also spins a silken web in which it feeds on the upper leaf surface.

Biology

The eggs are deposited in early spring on the upperside of the leaves of *Ficus carica*. The young caterpillars eat parts of the upper parenchyma, but leave the underside of the leaf intact. Later instars make a slight, silken web and eat all the green parts of the leaf, leaving the veins undisturbed, thus "skeletonizing" the leaf. They also often turn a leaf edge up and feed under this shelter. Full-grown caterpillars are 15 mm long, pale green with conspicuous black spinacula on each body segment; the head is yellowish brown. Most of the time there are but a few caterpillars per tree, but they can sometimes be very numerous as was observed in Turkey by the first author in 1989 when almost every leaf of a *Ficus* tree was infested in the neighbourhood of Akşehir (Konya). In general, however, the species is just a minor pest and it does normally not infest the fruits. Full grown caterpillars pupate on the upperside of another leaf from the one they were feeding upon or on the ground amongst leaf litter in a rather strong, pure white, silken cocoon. Caterpillars move violently when disturbed and often drop to the ground. The adults emerge in July – August and produce a second generation in September – October. The adults of this autumn generation hibernate in thatch, amongst dead leaves, in hedgerows, etc., in the same manner as the adults of the congeneric *Choreutis pariana*, living on *Malus* sp. or *Choreutis diana*, living on *Betula* spp. (Alford, 2014: 225).

Distribution

Choreutis nemorana is mainly distributed in the Mediterranean area where its foodplant, *Ficus carica*, occurs. It has been recorded from Albania, Austria, Belgium, Bosnia and Herzegovina, Croatia, Cyprus, France (incl. Corsica), Germany, Gibraltar, Greece (incl. Aegean Islands, Crete, Dodekanese Islands), Hungary, Italy (incl. Sardinia and Sicily), Macedonia, Malta, Portugal (incl. Madeira), Romania, Spain (incl. Balearic Islands and Canary Islands), Switzerland, Turkey, and Ukraine (incl.

Plate 5. *Choreutis nemorana*, male, e.l. *Ficus carica*, Hyde Park, London, emerged 18 July 2014.

Plate 6. *Choreutis nemorana*, female, e.l. *Ficus carica*, Hyde Park, London, emerged 16 July 2014.

Crimea) (Karsholt & van Nieukerken, 2013; De Prins *et al*., 2014). Outside Europe, *C. nemorana* also occurs in N. W. Africa, Asia Minor, Iran, the Caucasus, Georgia, Azerbaijan, Armenia, Turkmenistan, and Uzbekistan. Furthermore, there are some single, but confirmed records from China (Danilevski & Kuznetzov, 1973; Diakonoff, 1986).

The occurrence in more northern countries (certain records from Austria and Germany in 2006, Switzerland in 2008) is rather recent though *Ficus carica* was planted there long time ago in xerothermic habitats, mainly along vineyards. Global warming probably caused the species to spread northwards. It is strange, though, that the very first mention of this species in German literature dates back to 1856, when a specimen was recorded from Wiesbaden (Koch, 1856). This record, however, is at least doubtful and probably erroneous (Diakonoff, 1986). *C. nemorana* is not mentioned in the German catalogue of 1999 (Gaedike & Heinicke, 1999), but it is in the Nachträge und Korrekturen from 2008 (Gaedike, 2008). It is now a well established species in several areas of Germany. It has also steady colonies in Austria since at least 2008 (Christian *et al*., 2008). Huemer (2013) records the species from various parts in that country: Vorarlberg, Kärnten, Salzburg, Niederösterreich, and Wien. In France, the species is rather well distributed, especially in the southern part; Lhomme (1946–1963) lists 18 French departments. The presence of the species in Belgium was noticed some years ago; recently it has become more widely established in the region of Liège and can be quite common there (De Prins *et al*., 2014).

Checklist

Choreutis nemorana should be listed in the new British Lepidoptera checklist (Agassiz *et al*., 2013) after *Choreutis pariana* as number 48.008 on page 42.

Acknowledgements

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Diplopseustis perieresalis (Walker) (Lep.: Crambidae) in Lancashire in 2008

In the article reporting the discovery of *Diplopseustis perieresalis* (Walker) in Norfolk (*Entomologist's Rec. J. Var*. **126**: 146-7), Dave Appleton documents previous records of this moth in Britain. To his list of former sightings I would like to add the one found by Chris Darbyshire in Billinge, Lancashire (VC59) on 23 July 2008 and published in the *Entomologist's Gazette* **60**: 24.

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TETRAMOERA LANGMAIDI SP. NOV. (LEP.: TORTRICIDAE, OLETHREUTINAE, ENARMONIINI): A NEW SPECIES OF PROBABLY ORIENTAL TORTRICID MOTH FROM ENGLAND

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Abstract

Tetramoera langmaidi Plant, 2014, **sp. nov.** is described from specimens taken at light traps in the southern English counties of Hampshire and Hertfordshire. Both sexes are described and illustrated; the genitalia of both sexes are figured. The species is likely to be associated with bamboo that was imported from propagated stock from the south of Ireland.
Keywords: Tortricidae, Enarmoniini, *Tetramoera langmaidi* sp. nov.

Background to the discovery

On the night of 17 July 2014, Andrew Wood caught an unfamiliar tortrix moth in his garden in the northern part of Hertford town in Hertfordshire, England. A photograph was circulated by Andrew on an Internet discussion group concerning Hertfordshire moths, as a result of which it was agreed that a more critical examination of the moth was called for. The moth was, therefore, delivered to CWP who determined that it was a male and dissected it. The genitalia, however, did not resemble any known Western Palaearctic species, a view that was agreed with by Jon Clifton, Brian Goodey and Rachel Terry, to whom images were e-mailed for an opinion. The photograph of the moth and a sketch of the genitalia were next e-mailed by CWP to John R. Langmaid (JRL) in Southsea, Hampshire – an act that stimulated an almost instantaneous response of "that's my moth". In the ensuing telephone conversation it was revealed that John had caught an identical insect, with identical genitalia, in his garden on 28 July 2008.

After catching his moth, JRL had a significant exchange of e-mails with various authorities on the Tortricidae, all of which he has most kindly copied to me. These reveal that none of the "world's experts" on the group could recognise the species, with some going as far as to suggest that it was in fact undescribed. After some discussion between us, JRL and CWP agreed that whilst JRL was undoubtedly correct not to name this moth on the basis of his single specimen, the discovery of a second example at a different geographical location made this act rather more desirable. However, we were agreed that it would be most desirable to obtain a female, in order to confirm its precise taxonomic position, before "rushing into print".

Unfortunately, two additional examples that had been retained in Andrew Wood's freezer were found to have been accidentally discarded; we were extremely pleased, therefore, that a further example caught on 24 July 2014 and sent to CWP was indeed a female. Having somewhat fluffed the earlier dissection of the male, I decided that the honour of dissecting the female should fall to Brian Goodey, whose website at *www.dissectiongroup.co.uk* enjoys world-wide recognition.

Plate 1. *Tetramoera langmaidi* sp. nov. Holotype male. Southsea, Hampshire, England, 28.vii.2008, in coll. John R. Langmaid.

Plate 2. *Tetramoera langmaidi* sp. nov. Paratype male: Hertford, Hertfordshire, England, 17.vii.2014, Andrew Wood, in coll. C. W. Plant.

Thus, with all the pieces of the jigsaw finally assembled, we agreed that it was time that this species was finally described.

Taxonomic account

***Tetramoera langmaidi* sp. nov.**

Holotype Male: Southsea, Hampshire, England, 28.vii.2008, in coll. John R. Langmaid, (Plate 1).

Description of Holotype male: Wingspan of set specimen 14 mm. Thorax (including tegulae) and abdomen above covered in orange-brown scales, sparsely admixed with darker scales, more or less concolorous with the basal area of the forewing. Head with vertex and antennal scapes covered in more or less erect orange-brown scales, extending between the antennae to affect the rear part of the frons where they become reclinate, directed downwards; two small, dark scale patches, one each side of the vertex; main area of frons paler, with flattened, whitish-orange scales, concolorous with the underside of the head and thorax; antennal length fractionally more than one third of the length of the forewing (but visually reaching about half way); flagellum of antenna with orange and grey scales, giving the appearance that it is slightly darker. Labial palpus porrected; segments 1 and 3 small; segment 2 greatly elongated and in the distal portion both laterally compressed and dorso-ventrally expanded; segment 1 entirely covered by the pale orange-brown ground colour; segment 3 entirely grey; segment 2 pale on the inner face and outer faces, but with a dark patch on the basal half of the outer face and with elongate, dark scales that describe a line around the dorsal, apical and ventral aspects, to form a laterally compressed fan that largely obscures segment 3. All three pairs of legs banded with dark grey and pale brownish on the dorsal aspect; more or less entirely pale on the ventral surface. Forewing typical of the genus, without a costal fold, costa mildly convex, termen sinuate towards the apex and rounded in the tornal region, hind margin slightly excavated in the outer third before the tornus; forewing upperside ground colour orange-brown; fasciae more or less obscure apart from the costal strigulae; basal three-quarters, in the rear two thirds, with an entire covering of orange-brown ground colour densely overlaid with darker brown or blackish scales that are more or less arranged in sinuous lines, such that to the unaided eye the moth appears to be darkly strigulate from costa to dorsum ("mackerel pattern"); costal strigulae of the ground colour, but defined by adjacent short, blackish streaks; strigulae 4 and 5 (*vide* Baixeras, 2002), weakly produced as plumbeous striae, those from 4 reaching, but not entering into, the "mackerel pattern" area and that from 5 running obliquely outwards to end just short of the sub-apical indentation of the termen; the outer quarter of the wing entirely covered by the orange-brown ground colour and affected by an ocellus that is rather weakly defined by two vertical lines of plumbeous scales, the inner line stronger and outwardly concave and the outer line weaker and inwardly concave – the two appear as if a pair of parentheses and enclose two or three minute spots comprised of black scales; termen defined by a single line of black scales from apex to tornus, prominent in the apical half, but weak to obsolescent in the tornal half; cilia pale with greyish tips, entirely grey at the tornus.

Plate 3. *Tetramoera langmaidi* sp. nov. Holotype male genital capsule with phallus to scale.
Preparation and photography by Martin Honey

Hindwing upperside grey; cilia pale grey with a dark grey region creating a dark sub-basal line.

Underside entirely grey, paler yellowish-orange narrowly along the costa and in the apical one-sixth.

Genitalia: Plate 3. Vinculum short; uncus with triangular base then narrowed and parallel-sided posteriorly, slightly but clearly bi-lobed at tip and the lobes covered with longish hairs; socii relatively large, drooping downwards; tegumen weakly developed, the height of the genital capsule from vinculum tip to uncus tip just slightly

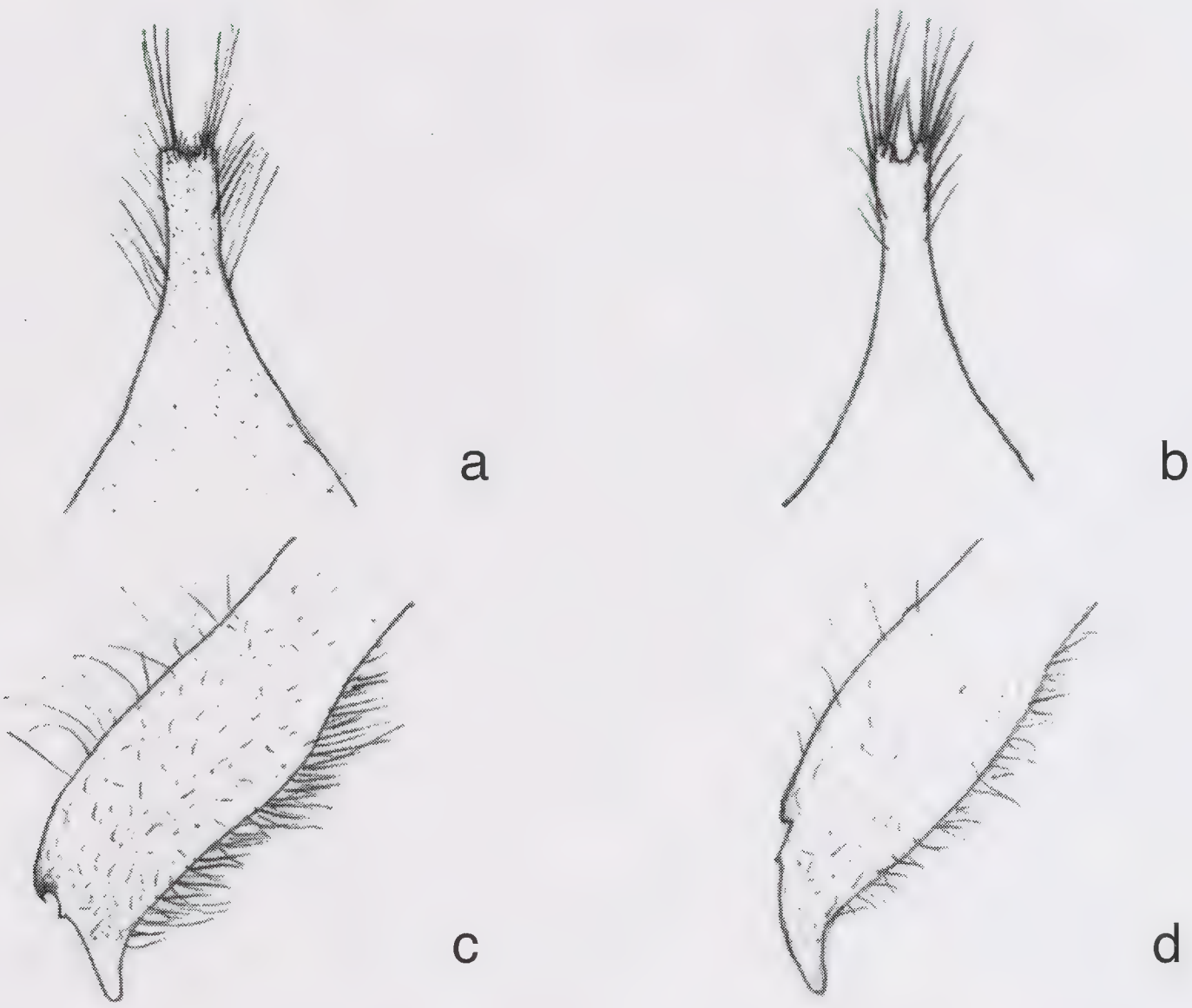

Fig. 1. Differences in the uncus and cucullus between holotype and paratype of *Tetramoera langmaidi* sp. nov.
a. uncus of holotype [top left]; b. uncus of paratype [top right]; c. cucullus of holotype [bottom left]; d. cucullus of paratype [bottom right]

shorter than the length of a valva measured in a straight line; valva long and narrow, truncated at the cucullus which bears two minute terminal teeth and a single large scale in the apico-ventral corner; sacculus large, appearing as a triangular projection of the basal third of the valva, with its apex directed ventrally. Phallus with the basal membranous half distinctly twisted, the distal half lightly sclerotised and containing a group of elongate cornuti.

Paratype male: Hertford, Hertfordshire, England, 17.vii.2014, leg. Andrew Wood, in coll. C. W. Plant, (Plate 2).
Length 10 mm. Wingspan of set specimen 12 mm. Median fascia, as defined by costal strigulae 4 and 5 (see Baixeras, 2002), slightly more pronounced than in holotype, at least dorsally, suggesting that this may be a variable feature. Otherwise identical to the holotype in all respects (minor visible differences are due to wear in the specimen). Genitalia. Minor differences in the form of the valva, which in the paratype is not truncated but more elongated, with the minute teeth shifted antero-basally and the uncus which is more clearly bi-lobed than in the Holotype. Both of these, drawn at Fig. 1, are perhaps artificial and may be dependent upon the pressure applied to the glass cover-slip on the slide.

Paratype female: Hertford, Hertfordshire, England, 24.vii.2014, leg. Andrew Wood, in coll. C. W. Plant.
Length 9.5 mm. Wingspan of set specimen 13 mm. Identical to male in all other respects.
Genitalia: Plate 4. Papilla analis broad, rounded-triangular; sterigma wider than long, slightly concave posteriorly (bowl-shaped) and fused with sub-genital plate; ostium bursae simple; colliculum absent; ductus bursae long, more or less the same length as the corpus bursae and more or less parallel-sided except for a slight widening in the anterior section as it enters the corpus bursae; un-sclerotised except for the anterior section, which is very weakly sclerotised and from which the ductus seminalis arises; corpus bursae ovate, very weakly sclerotised; a single signum, presenting as a broadly circular patch of sclerotisation that is produced into a small thorn, positioned towards the posterior end of the corpus bursae.

The corpus bursae contained spermatophores, indicating that mating had taken place.

Material not examined

A second example from the Hertford site on 17.vii.2014, as well as single examples from the same location on 20.vii.2014 and 21.vii.2014, all unsexed, were not retained and so could not be examined.

Generic position

In physical appearance, *Tetramoera langmaidi* sp. nov. is similar to the *Fagus*-feeding *Rhopalovalva amabilis* Oku, 1974 but the genitalia are significantly different (*vide* Oku, 1974).

More appropriately, it is very close in overall appearance to *Tetramoera flammeata* (Kuznetzov, 1971). Kuznetzov originally described *flammeata* in his own subgenus *Enarmonopsis* Kuznetzov of genus *Enarmonia* Hübner (Kuznetzov, 1971). The genus *Tetramoera* was raised by Diakanoff ([1968] 1967). It is a small group containing around half a dozen species (Brown, 2005), though this has been added to recently and the geographical range of the genus broadened (*vide* e.g., Byun, 2009). Kuznetzov (2001) transferred a number of taxa from *Enarmonia* Hübner into *Tetramoera* Diakonoff, on the basis of "*all veins of the forewing emerge separately from the discal cell, R_1 emerges distad from the middle of the discal cell, the bases of M_3 and Cu_1 are located next to each other. M_3 and Cu_1 of the hind wings emerge from the same point. Male genitalia with modified uncus reduced to some degree; valvae with broad base and gradually rounded tip of the sacculus; cucullus narrow, with a longitudinal crest or lamella covered by dense chaetae on the inner surface; aedeagus supported by short caulis, with a single cornutus in the vesica. Female genitalia with cup-shaped antrum and a single thumbtack-shaped signum. 10-18 mm. Larvae bore young sprouts of Poaceae with large stems. Pantropical genus*." The new species also seems to be best placed in *Tetramoera* even though some characters do not appear to fit absolutely.

Plate 4. *Tetramoera langmaidi* sp. nov. Paratype female. a. genitalia; b; Abdominal skin.
Preparation and photography by Brian Goodey

On the basis of the original genitalia drawings in Kuznetzov (1971) it is evident to me that Kuznetzov's *flammeata* belongs in the same genus as the new species. Interestingly, however, Kuznetzov (*op. cit.*) did not specifically transfer his own *flammeata* into *Tetramoera* and subsequently both Brown (2005) and Horák (2006) include it in *Enarmonia* without particular comment. Thus, although the combination *Tetramoera flammeata* (Kuznetzov, 1971) is already in use by some writers it may be that no formal transfer has ever been made in the literature. This present paper does not seek to formalise that combination. It is clear that the generic positioning of both *flammeata* and *langmaidi* is potentially incorrect and a new genus may need to be erected, or else sub-genus *Enarmonopsis* might need to be raised to generic rank, in order to accommodate both the new species and others? This is beyond the scope of the present paper.

Etymology

The specific epithet refers to Britain's most senior amateur micro-lepidopterist, Dr John R. Langmaid, who captured the Holotype male in his garden at Southsea, Hampshire, England and who has most kindly allowed me the honour of describing it.

Biology and geographical origins

The genus *Tetramoera* is widely distributed from South Africa via south-east Asia (Mauritius, Sri Lanka, India, Myanmar, China, Japan, Korea, Taiwan, the Philippines, Indonesia and Papua New Guinea) to Australia (Byun, 2009).

The biology of the genus is not well-studied. *Tetramoera flammeata* is known to feed in the shoots of Palm Bamboo (= Broadleaf Bamboo) *Susa palmata* (Gramineae: Poaceae) in Japan (Bae & Sakamaki, 1995). *T. schistaceana* Snellen is a pest of Sugar Cane *Saccarum officinarum*, which is also a member of the Poaceae (Kalshoven, 1981). Horák (2006) asserts that the wing pattern of members of this group is typically that of the graminaceous feeders.

The Hertfordshire specimens have a clear, if circumstantial, link with bamboo plants. Potted examples of three species, namely *Fargesia robusta* (two plants), Black Bamboo *Phyllostachys nigra* "*punctata*" (one plant) and Golden Bamboo (= Fish-pole Bamboo) *Phyllostachys aurea* (two plants), each growing around two metres tall, were imported to the garden next door to that where the captor has run his moth lamp for many years, on 27 June 2014, some three weeks before the date of the first capture (Plate 5); this perhaps suggests that they probably arrived in Hertfordshire as either fully fed larvae or as pupae. Regrettably, it was not possible to access the plants before the middle of August; at that date both I and Andrew Wood searched the plants carefully for any sign of feeding in the foliage, stems or exposed rhizomes, but all that was found was some limited feeding damage caused by bamboo mite (*Schizotetranychus celarius*) on some plants of *Phyllostachys nigra* that had been introduced to the garden several years earlier.

The natural distribution of the three bamboo species that may or may not be host to the Hertfordshire specimens is as follows:

Phyllostachys nigra	Korea, China & Japan
Phyllostachys aurea	China
Fargesia robusta	China

The new bamboo plants were supplied by an importer based in Aberdeen, Scotland, who has been most helpful in assisting with back-tracking the plants. Interestingly, however, this back tracking leads only as far as the southern part of Ireland where bamboo plants of several species have been propagated for many years by simple splitting of rhizomes; there has been no importation of bamboos from overseas in recent years. Consequently, if these bamboo plants *are* the source, then it is possible that there may be a temporarily established breeding population in Ireland! This surely warrants investigation by the natives. It is of interest that the paratype female's corpus bursae contained a large number of spermatophores, indicating that mating had taken place at the Hertfordshire locality.

Plate 5. Bamboo plants in pots at the Hertfordshire site, August 2014 – the probable origin of the moths. The light trap is positioned on the other side of the fence in the next garden.

Location of type material

The holotype is held in the J. R. Langmaid collection and will eventually be deposited at BM(NH); the paratype female resides in the C. W. Plant collection which is destined, ultimately, for the cabinets of the British Entomological & Natural History Society.

The British checklist

In the new checklist of British Lepidoptera (Agassiz *et al*, 2013), *Tetramoera langmaidi* Plant, 2014 should be inserted between 49.200 *Enarmonia formosana* (Scop.) and 49.201 *Ancylis unguicella* (L.). For the benefit of computerised recording programs that currently retain the Bradley & Fletcher (1979) numbering system, the code number 1216a is appropriate.

Acknowledgements

A large number of people have contributed to this paper, either directly to me or indirectly through Dr John Langmaid. Andrew Wood initially alerted me to the unidentified Hertfordshire moth and Mrs Ines Parsonson subsequently permitted us access to her garden to investigate her bamboo plants. Following his discovery of the holotype in 2008, John Langmaid received e-mailed helpful comments and opinions from (alphabetically), David Agassiz (England), John W. Brown (USA), Martin Corley (England), Martin Honey (England), Marianne Horák (Australia), Roger R. Kendrick (Hong Kong), Furumi Komai (Japan), Knud Larsen (Denmark), Hou Hun Li (China), Jozef Razowski (Poland) and Kevin Tuck (England). Discovery of the paratype in Hertfordshire led to similar communications with Brian Goodey (England), Jon Clifton (England), Knud Larsen (Denmark), Rachel Terry (England), Mark Young (Scotland) and Boyan Zlatkov (Bulgaria). Boyan Zlatkov also kindly translated Russian references for me and made several important corrections to my original description of the new species. Bong-Kyu Byun (Korea) provided helpful comments on the generic position of the new species. Martin Honey prepared and photographed the genitalia of the holotype male; Brian Goodey prepared and photographed the paratype female genitalia. A "finished" draft of this paper was read and constructively criticised by David Agassiz and Boyan Zlatkov, whose comments are all accepted. I am grateful to all of these ladies and gentlemen for their kind assistance.

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Behaviour of sexually immature female Brimstone *Gonepteryx rhamni*

Female Brimstone *Gonepteryx rhamni* butterflies are known to overwinter sexually immature. On 8 April 2014 a male was seen courting a female. The male broke off the courtship several times, but always seem to come back to court the female. The female eventually settled with the classic mate refusal posture as is typical of the other *Pieridae*, the display of the open wings preventing the male from copulating. After the male had given up, the female then was observed nectaring on Cowslip *Primula veris* and Dandelion *Taraxacum officinale*.

Later, at 15.00 hours, another female Brimstone was seen flying in to roost underneath a Bluebell flower *Hyacinithoides non-scripta*. She was obviously not nectaring as her head was facing the stem. There was not an obvious reason for her to start roosting mid-afternoon, as plenty of other butterflies were still flying. However, if the female was still sexually immature, and had fed up earlier in the day, then there would obviously be no use in wasting energy by flying around, though that does not stop the males searching in hope.

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CONTRIBUTION ON THE MACROLEPIDOPTERA OF THE REPUBLIC OF MACEDONIA WITH A REPORT OF ONE NEW GENUS AND FOUR NEW NOCTUIDAE SPECIES FOR THE COUNTRY

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Abstract

Hydraecia micacea (Esper, [1789]), *Egira tibori* Hreblay, 1994, *Egira anatolica* (Hering, 1933) and *Albocosta musiva* (Hübner, [1803]) are reported for a first time for the fauna of the Republic of Macedonia. Genus *Hydraecia* Guenée, 1841 is also new for the country. Male genitalia including aedeagi with everted vesicas of European *Egira* species are illustrated along with those of *Hydraecia micacea.*

Keywords: Lepidoptera, Noctuidae, Macedonia, Galichitza, genitalia, new records.

Introduction

The Noctuidae fauna of the Republic of Macedonia is relatively well explored, but finding a new species for this country is still easy. The reason is a distinct lack of native lepidopterists conducting night research or collecting. Research has been undertaken, primarily, by West European, ex-Yugoslavian and Bulgarian lepidopterists and there are no native Macedonians collecting at night.

The present author visited Macedonia on three occasions in 2013 with the intention of contributing to the knowledge of the nocturnal Lepidoptera of this interesting country. Results from the first trip in early March have been presented (*Antea*, 133-143).

A second trip was made, for one night only, at the end of April with collecting in Demir Kapiya. Eight male *Egira* specimens were collected which, after examination of the genitalia were discovered to include three species, two of them new for Macedonia. These, and some other interesting species from this trip are also reported here.

The third collecting trip was to the Galichitza Mountain and the western shore of Prespa lake. At both locations, two portable, battery-operated traps and the main lamp run from the generator were deployed. In Galichitza, two nights of light trapping were undertaken in the highest parts accessible by car. The number of collected species in the first few days, at low altitude, is low probably because of the bad weather (rain) but one species (*Hydraecia micacea*) also new to Macedonia was caught at Prespa lake.

Inventory of species

Family Lemoniidae

Lemonia balcanica (Herrich-Schäffer, 1847). Galichitza Mts between Dvata Yavora and Bulgarska Tchuka summit, 1587m, N40°59′27″, E020°51′28″, 17.viii.2013, mountain steppe near *Fagus* forest, S. Beshkov leg. one male. Unusual early flight period.

Family Lycaenidae

Glaucopsyche alexis (Poda, 1761). Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24′07″, E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, one female.

Polyommatus thersites (Cantener, [1835]). Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24′07″, E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, two males and one female.

Family Nymphalidae

Melitaea ornata Christoph, 1893. Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24′07″, E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, two males and one female. This species is reported as a new for Macedonia very recently (Verovnik, Micevski, Duric, Jaksic, Keymeulen, van Swaay & Veling, 2010) as *Melitaea telona* Fruhstorfer, 1908 and at present has very few localities in the country. It seems that *Melitaea ornata* is widely spread in warm, arid places at low altitude in the southern Balkans. The reason for the small number of known localities is misidentification with the closely related *Melitaea phoebe* ([Denis & Schiffermüller], 1775). Both species can be easily split on the shape of the antennal club (Plate 1) and the marginal lunules on the underside of the forewings and hindwings: In the marginal region the lunules are triangle-like in *M. ornata* (Plate 2), whilst they form a zigzag line in *M. phoebe* (Tóth & Varga, 2011).

Family Drapanidae

Cilix glaucata (Scopoli, 1763). Middle Vardar river valley near Demir Kapiya, 130m, N41°24′07″; E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, one female.

Cilix asiatica (O. Bang-Haas, 1907). Middle Vardar river valley near Demir Kapiya, 130m, N41°24′07″; E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, two males. *Cilix asiatica* is widespread in the Balkans; the low number of recorded localities doubtless arises from its misidentification as *Cilix glaucata*. Both species often are syntopic and synchronic. They can be separated easily on the number of marginal spots on the upperside of the forewings: in *Cilix glaucata* there are 6 – 7 spots, whilst in *Cilix asiatica* they are 4.

Family Geometridae

Eumera regina Staudinger, 1892. Galichitza Mts between Dvata Yavora and Bulgarska Tchuka summit, 1587m, N40°59′27″; E020°51′28″, 17.viii.2013, mountain steppe near *Fagus* forest, S. Beshkov leg., seven males.

Plate 1. *Melitaea ornata*, antennal club, Demir Kapiya, 27.iv.2013.

Plate 2. *Melitaea ornata*, underside, Demir Kapiya, 27.iv.2013.

Plate 3. *Hydraecia micacea*, male, Prespa lake, 16.viii.2013.

Charissa certhiatus (Rebel & Zerny, 1931). Galichitza Mts between Dvata Yavora and Bulgarska Tchuka summit, 1587m, N40°59′27″; E020°51′28″, 17.viii.2013, mountain steppe near *Fagus* forest, S. Beshkov leg., two males and one female; Galichitza Mts, small lake between Asan Djura and Samatska Dupka cave, 1481m, N41°01′51″; E020°51′09″, 18.viii.2013, mountain steppe with *Juniperus* and near *Fagus* forest, S. Beshkov leg., two males.

Aspilates gilvaria ([Denis & Schiffermüller], 1775). Galichitza Mts between Dvata Yavora and Bulgarska Tchuka summit, 1587m, N40°59′27″, E020°51′28″, 17.8.2013, mountain steppe near *Fagus* forest, S. Beshkov leg., abundant.; Galichitza Mts, small lake between Asan Djura and Samatska Dupka cave, 1481m, N41°01′51″, E020°51′09″, 18.viii.2013, mountain steppe with *Juniperus* and near *Fagus* forest, S. Beshkov leg., abundant.

Family Erebidae

Euplagia quadripunctaria (Poda, 1761). Prespa lake - Galichitza Mts, between Oteshevo and Stenje villages, 858m, N40°58′59″, E020°55'09″, *Phragmites*, *Tilia*,

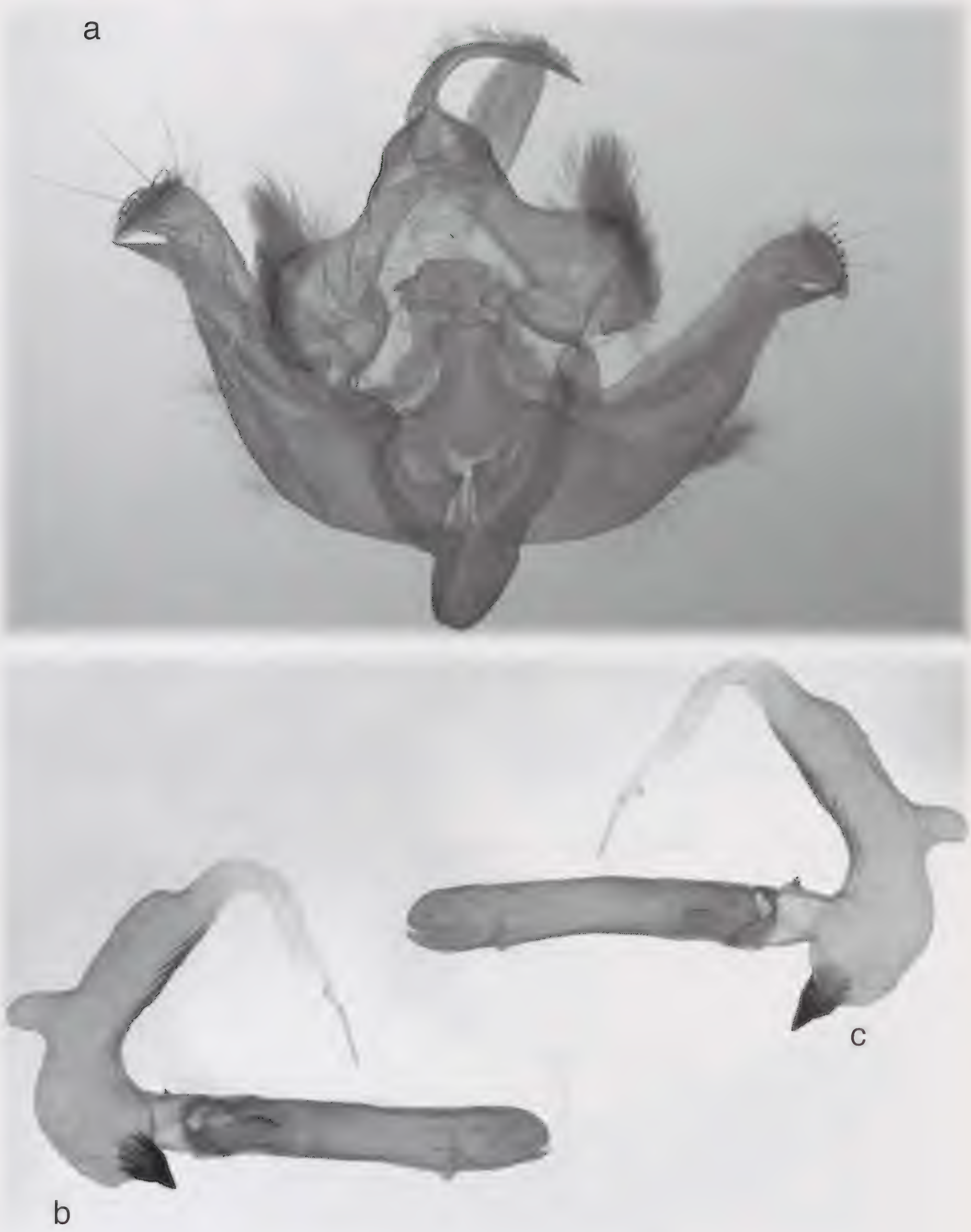

Plate 4. *Hydraecia micacea*, Prespa Lake, 16.viii.2013, male genitalia. a. genital armatura, b, c. aedeagus with everted vesica.

Plate 5. *Egira conspicillaris,* Demir Kapiya, 27.iv.2013, male genitalia. a. genital armatura, b, c. aedeagus with everted vesica, d. aedeagus.

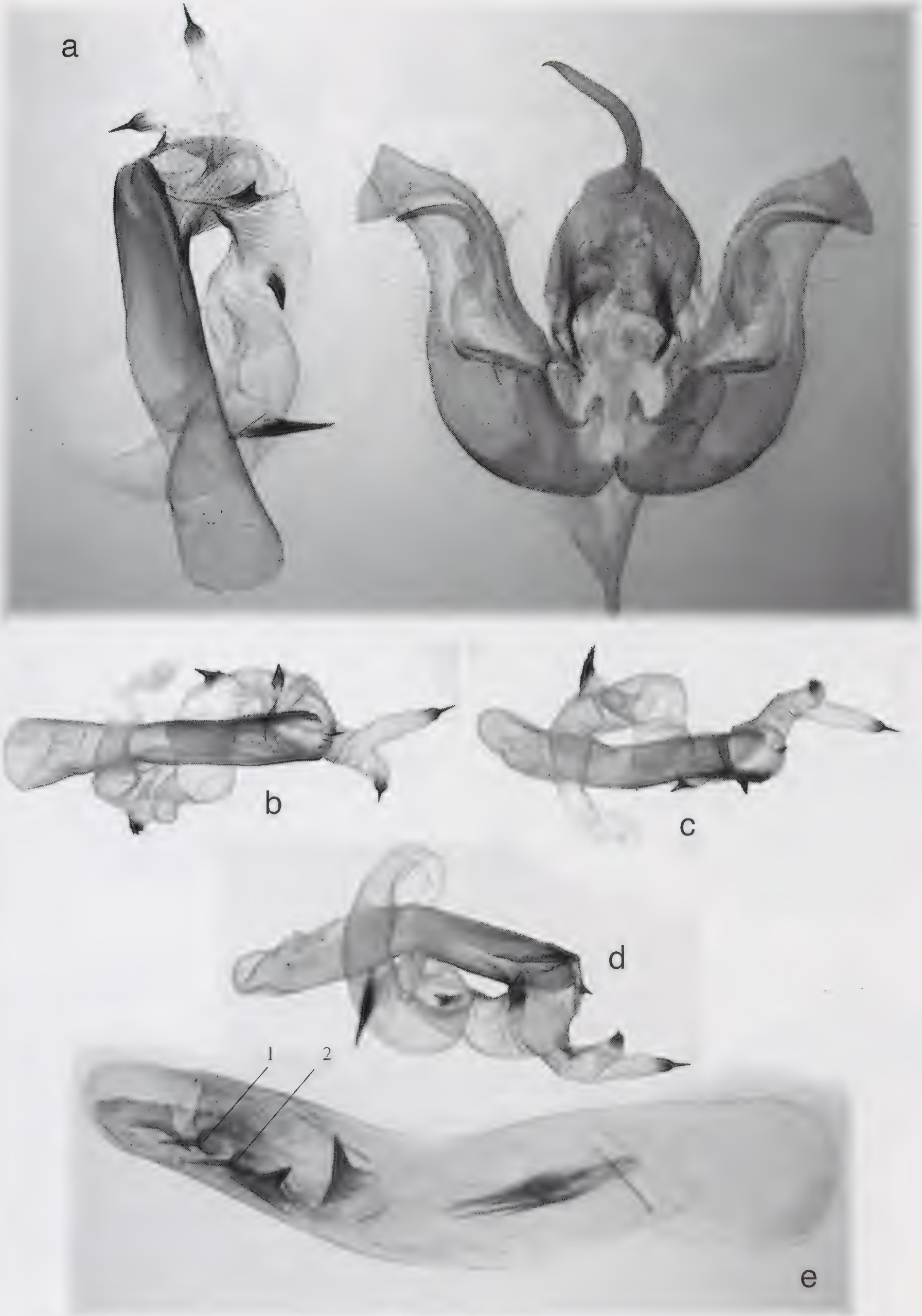

Plate 6. *Egira tibori,* Demir Kapiya, 27.iv.2013, male genitalia. a. genital armatura, b, c, d. aedeagus with everted vesica, e. aedeagus.

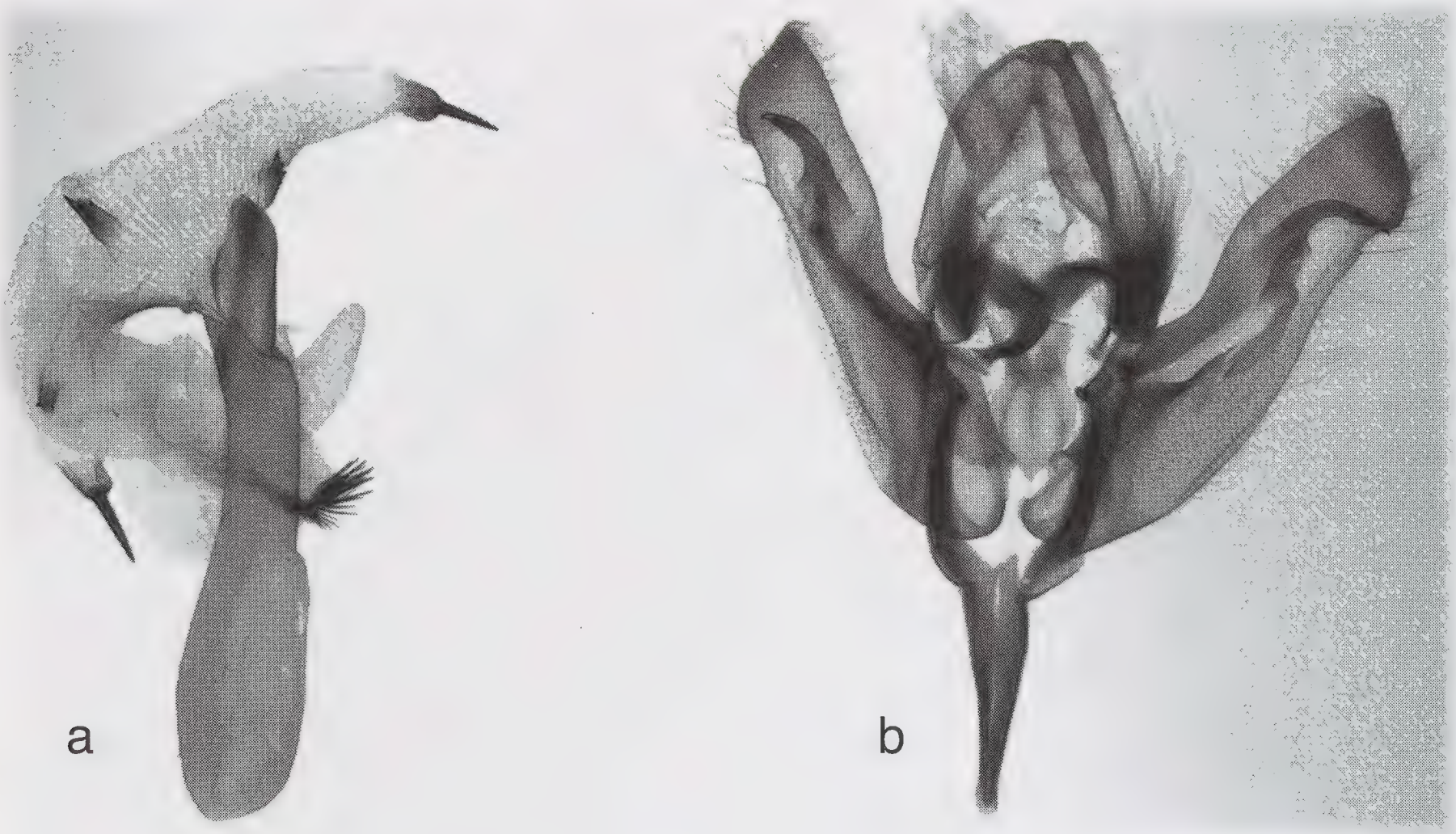

Plate 7. *Egira anatolica,* Demir Kapiya, 27.iv.2013, male genitalia. a. genital armatura, b, c. aedeagus with everted vesica, d. aedeagus.

Plate 8. *Albocosta musiva*, male, Galichitza between Dvata Yavora and Bulgarska Tchuka, 17.viii.2013.

Quercus, *Acer*, meadows, 16.viii.2013, S. Beshkov leg.; Galichitza Mts between Asan Djura and Samatska Dupka cave, 1498m, N41°01′42″, E020°50′56″, 18.viii.2013, mountain steppe with *Juniperus* near *Fagus* forest, S. Beshkov leg., at light trap; Galichitza Mts, small lake between Asan Djura and Samatska Dupka cave, 1481m, N41°01′51″; E020°51′09″, 18.viii.2013, mountain steppe with *Juniperus* near *Fagus* forest, S. Beshkov leg., at lamps on generator, one male. *Euplagia quadripunctaria* is listed in Annex II of the EEC 92/43 Habitat Directive.

Family Noctuidae

Pseudozarba bipartita (Herrich-Schäffer, 1850). Prespa lake - Galichitza Mts, between Oteshevo and Stenje villages, 858m, N40°58′59″, E020°55′09″, *Phragmites*, *Tilia*, *Quercus*, *Acer*, meadows, 16.viii.2013, S. Beshkov leg., 1 male.

Hydraecia micacea (Esper, [1789]). Prespa lake – Galichitza Mts, between Oteshevo and Stenje villages, 858m, N40°58′59″; E020°55′09″, *Phragmites*, *Tilia*, *Quercus*, *Acer*, meadows, 16.viii.2013, S. Beshkov leg., one male. **New to the fauna of Macedonia.** So far as the present author knows, the genus *Hydraecia* Guenée, 1841 has never been published in the scientific literature for the country. There is doubtful and unconfirmed data for *Hydraecia petasitis* Doubleday, 1847 for Macedonia on the Internet. The Macedonian specimen (Plate 3) and its genital armature, including aedeagus with everted vesica are illustrated here (Plate 4).

Egira conspicillaris (Linnaeus, 1758). Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24′07″, E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, three males. Under this name are perhaps reported all *Egira* species so far caught in Macedonia. *E. conspicillaris* can be split from *E. anatolica* by appearance, but not always easily and from *E. tibori* it can be split with certainty only after examination of the male genitalia (Plate 5), in particular the aedeagus and everted vesica. In *E. conspicillaris* everted vesica is with diverticulum with one bulbous cornutus (Plate 5 b,c), whilst in *E. tibori* the everted vesica has a bifurcated diverticulum with two bulbous cornuti (Plate 6 b,c,d). In many localities, including Demir Kapiya, the three species are syntopic and synchronic.

Egira tibori Hreblay, 1994. Middle Vardar river valley near Demir Kapiya Town, 130m, N41°24′07″, E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, three males. **New to the fauna of Macedonia.** *Egira tibori* was described twenty years ago from Asiatic part of Turkey. Beshkov (1999) reported it as a new species for Europe from several localities in Bulgaria. This species was not described and reported before because of confusion with *E. conspicillaris*. These species can be separated by the differences in the male genitalia described above and by examination of the aedeagi without any need to evert the vesica. In *E. conspicillaris* there is one bulbous cornutus (Plate 5 d), and in *E. tibori* (Plate 6 e) cornuti are two. In *E. anatolica* the cornuti also number two, but they are much bigger (Plate 7 d).

Egira anatolica (Hering, 1933). Middle Vardar river valley near Demir Kapiya, 130m, N41°24′07″, E022°17′17″, 27.iv.2013, maquis on limestone ground, *Quercus coccifera, Quercus* sp., *Paliurus spina-christi*, meadow, two males. **New to the fauna of Macedonia.** This species was not reported for this country before due to confusion with *E. conspicillaris*, although both species can be split each other on appearance. Male genitalia are diagnostic (Plate 7). The everted vesica is also very characteristic, bearing two large diverticuli ending with large bulbous cornuti (Plate 7 b,c). These cornuti can be seen even without everting the vesica (Plate 7 d). An aberrant form, with three diverticuli and cornuti, was wrongly described as different species – *Egira bulgarica* Beshkov, 2000, and is now accepted as a synonym of *Egira anatolica.*

Albocosta musiva (Hübner, [1803]). Galichitza Mts between Dvata Yavora and Bulgarska Tchuka summit, 1587m, N40°59′27″, E020°51′28″, 17.viii.2013, mountain steppe near *Fagus* forest, S. Beshkov leg. (Plate 8), 5 males; Galichitza Mts, small lake between Asan Djura and Samatska Dupka cave, 1481m, N41°01′51″, E020°51′09″, 18.viii.2013, mountain steppe with *Juniperus* and near *Fagus* forest S. Beshkov leg., one male. **New to the fauna of Macedonia.** Below Bulgarska Tchuka summit *A. musiva* was collected together with *Euxoa decora*

macedonica Thurner, 1936, *Chersotis elegans* (Eversmann, 1837), *Ch. anatolica* (Draudt, 1936), *Ch. fimbriola* (Esper, [1803]), *Ch. laeta* (Rebel, 1904) and during the day time there were also *Pseudochazara geyeri occcidentalis* (Rebel & Zerny, 1931), *Hyponephele lycaon* (Rottemburg, 1775) and *Arethusana arethusa* ([Denis & Schiffermüller], 1775). Near Asan Djura, *Litoligia literosa* (Haworth, 1809) and *Ch. multangula* (Hübner, [1803]) were collected together with *A. musiva*.

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Tomato Leaf Miner *Tuta absoluta* (Meyrick) (Lep.: Gelechiidae), a migrant new to Ireland

On 12 October 2011, an unknown Gelechiid, was taken by TB at light at Tramore, Co. Waterford, on the south-east coast of Ireland (Irish grid ref. S 577013; vice county H6), during a period of intense migrant activity (see Bryant, T. and Walsh, P. 2012. Reports from Coastal Stations – 2011. Tramore Bay, Co. Waterford. *Atropos* **45:** 77-78). This was later dissected and identified by KGMB as a female *Tuta absoluta* (Meyrick).

Native to South America, this adventive species, a notorious pest of Tomato and other plants in the Solanacaeae family, was first recorded in Europe from Spain in 2006. Quickly spreading, it reached Britain in 2009 (Homan, R. 2010. *Ent. Rec.* **122:** 31-32) and as a suspected migrant (Deans, M. J. 2014 Apparent immigrant *Tuta absoluta* in Britain. *Atropos* **51:** 100), which would seem to explain the occurrence of the Tramore specimen, Ireland in 2011.

The specimen will be lodged in the National Museum of Ireland, Natural History, Dublin.

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Behaviour in ovipositing female Green Hairstreak *Callophrys rubi* L. (Lep.: Lycaenidae)

DasGupta, S., Howcroft Ferreira, C. & Miesenböck, G. (2014. FoxP influences the speed and accuracy of a perceptual decision in *Drosophila. Science.* **344** (6186): 901-904), measured reaction times in flies choosing between different smells. Flies, like humans, deliberate before making perceptual judgments: They ponder difficult decisions longer than they do easy ones.

A similar decision process can be seen in female *Callophyrys rubi* (Green Hairstreak) when selecting the larval foodplant to lay eggs upon. On 18 May 2014 on the North Downs in Surrey, a female *C. rubi* was observed to land on *Helianthemum nummularium* (Common Rock-rose) which was visibly of sub-standard quality. The female remained stationary for a minute or two before deciding to move, first walking around the vegetation and then flying off. Another female *C. rubi* was seen to land on another plant of *H. nummularium* which visibly seemed in good health. Again the female spent a minute or two stationary on the rosette of the leaves of the plant, presumably tasting the leaves through her feet. After deciding the plant was to her liking, she then proceeded to oviposit into the tip of the plant shoot. After completing the operation she flew off to find another plant nearby. After repeating the "tasting" of the plant, which was not to her liking, she flew off. Subsequent inspection of the first plant i*n situ*, failed to locate any eggs.

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Continued presence of *Eana argentana* (Clerck) (Lep: Tortricidae) at its only British locality in Glen Tilt, Perthshire

The history of *Eana argentana* in Britain was reviewed by Knill-Jones and Bland (1986. Rediscovery of *Eana argentana* (Clerck) (Lepidoptera: Tortricidae) in Perthshire. *Ent. Gazette* **37**: 9-11). It was discovered in July 1875 in Glen Tilt by Dr F Buchanan White and thereafter found intermittently until 1920, at times being found over several miles of the glen, although mostly being seen only in a restricted area. Nothing more was seen of it, despite some searching, until Knill-Jones and Bland found it again in August 1985. It has never been found as a resident anywhere else in Britain, although single coastal vagrants have occurred in Norfolk in 1903 and Berwickshire about 1930.

Plate 1. *Eana argentana* (Cl.), male, Glen Tilt, Perthshire,18 July 2014.

Photograph: Polly Freeman

Apparently only one lepidopterist has searched for it successfully since 1985, although this finding has not been published, and so in late July 2013, with permission from Atholl Estate, KPB and MRY re-visited the precise location discovered in 1985 and found a single worn male. Encouraged by this, a repeat visit was made on 18 July 2014, in this case in the company of PF, with the hope that, if a specimen could be found, then the Rangers for Atholl Estate would be familiar with the species and so could hope to survey it within the glen in future years and be in a better position to help ensure its survival.

On a windy day of intermittent sunshine a worn male was finally found and then photographed by PF, surely the first time that the species has been pictured in Britain (Plate 1). In 1985 the moths were found in August, but before and since they have been seen in mid to late July and the worn condition of those seen in July 2013 and 2014 seems to confirm that in normal years this is the flight period.

A further puzzle is why *E. argentana* is found only in Glen Tilt in Britain and then whether it really is very restricted even within the glen and, if so, why this should be. An anomalous feature of the upper glen is a large patch of coniferous woodland and there has been informal speculation as to whether this may have been significant to the local origin of the species. On the Continent the species is quite widespread and it was considered possible that it might have been introduced to Glen Tilt in the mid 1800s with some forestry stock. However, PF has ascertained that the Glen Tilt conifers were planted in the 20th century and so this explanation of the species' origin is clearly not correct.

It is now hoped that the species can be searched for more regularly, in case its status changes and some conservation action is needed.

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Scythris inspersella (Hb.) (Lep.: Scythrididae) rediscovered in West Norfolk

Scythris inspersella was added to the British list by Sattler (1980. *Scythris inspersella* (Huebner, [1817]) new to the British fauna (Lepidoptera: Scythrididae). *Entomologist's Gazette* **32**: 13-17), who recorded numerous larvae on Rosebay Willow-herb *Chamaerion angustifolium*, with adults feeding on this and other flowers, in dunes at Holkham Meals, West Norfolk, in July and August 1980. His discovery quickly unearthed earlier captures of an adult from Hockwold (August 1977) and larvae from Stoke Ferry, near Downham Market (June 1980), both also in West Norfolk (Fenn, 1980. *Scythris inspersella* (Hübner) (Lepidoptera: Scythrididae) in Britain. *Entomologist's Gazette* **32**: 17). Since then there has apparently been just one further record in Norfolk, from Holkham Meals on 22.vii.1993, observer unknown (*per* Norfolk Moths website).

On the afternoon of 7 August 2014, in warm and sunny conditions, we set out for Holkham Meals expressly with the intention, although little expectation, of refinding *Scythris inspersella*. Using just small butterfly nets and lightly sweeping the tops of Rosebay Willow-herb in the dunes at O.S. grid reference TF 8845, we found at least two adult moths in a two-hour period. A third very dark micro-moth that escaped capture was also probably this species. Our identification was confirmed by Jon Clifton (one female, genitalia examined), who retains the voucher specimens.

Considering the comparative ease with which the moth gave itself up to us, we are of the opinion that the species must be more numerous (at least in warm summers) and possibly much more widespread than is generally believed. Sweeping of Rosebay Willow-herb stands in late July and early August, especially on dunes at coastal localities in eastern England, would be worth undertaking.

We thank Jon Clifton for confirming our identification, Jim Wheeler for providing information on the status of this species (see *www.norfolkmoths.co.uk*) and Sarah Henderson (Holkham Estate) for her support.

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Willow Ermine *Yponomeuta rorrella* (Hübner) (Lep.: Yponomeutidae), a migrant new to Ireland

On 31 July 2014, a Willow Ermine *Yponomeuta rorrella* (Hübner, 1796) was taken at light at Tramore, Co. Waterford (Irish grid reference S 577013; Vice county H6) on the south-east coast of Ireland during a period of migrant activity. The specimen was identified with reference to Sterling, Parsons and Lewington (2012. *Field Guide to the Micro-moths of Great Britain and Ireland*. British Wildlife Publishing) and Agassiz (1996. Yponomeutidae. *In:* Emmet & Langmaid (Eds.) *The Moths and Butterflies of Great Britain and Ireland* Vol 3, Harley Books). The larval foodplants are White Willow *Salix alba* and Grey Willow *Salix cinerea* and like other members of the genus the larvae feed gregariously in a web, sometimes defoliating the hostplant. Flying during July and August in Great Britain, their numbers are occasionally reinforced by migrants (Agassiz, 1996 *op. cit.*).

The identity of the moth has been kindly confirmed by K.G.M. Bond, University College, Cork and J.R. Langmaid, Southsea, Hampshire. The specimen will be lodged in the National Museum of Ireland, Natural History, Dublin.

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CACYREUS MARSHALLI BUTLER, 1898 (LEP.: LYCAENIDAE), A NEW SPECIES FOR BULGARIA

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Abstract

The butterfly *Cacyreus marshalli* Butler, 1898 is reported as new to the Bulgarian fauna.
Keywords: *Cacyreus marshalli*, Lycaenidae, Bulgaria.

Cacyreus marshalli

The Geranium Bronze *Cacyreus marshalli* Butler, 1898, is a native of South Africa. It has been introduced to Mediterranean Europe (initially the Balaeric Islands – Majorca), where it has spread as a pest of cultivated *Pelargonium*. Currently, its known range in the Mediterranean region includes Spain, Portugal, France, Italy, Malta, Slovenia, Croatia, Greece, Morocco and Turkey (Eitschberger & Stamer, 1990; Raynor, 1990; Sarto i Monteys & Maso, 1991; Tarrier, 1998; Trematerra et al., 1997; Sammut, 2007; Polak, 2009; Kosmač & Verovnik, 2009; Anastassiu et al., 2010; Soyhan et al., 2013). There are also isolated reports from Britain, Switzerland, Germany, Belgium, the Netherlands and Sweden.

Plate 1. *Cacyreus marshalli* Butler, Levunovo, Bulgaria, 10.viii.14.

Plate 2. *Cacyreus marshalli* Butler, Levunovo, Bulgaria, 10.viii.14.

During a visit of Southern Struma Valley of Bulgaria in August 2014, several specimens of *Cacyreus marshalli* drew our attention. The localities and material examined are as follows:

near Novo Hodzhovo Village, 125 metres (N41.40612°, E023.40513°), 8.viii.2014, 1 female observed;

Levunovo Village, 146 metres (N41.48693°, E023.30581°), 10. viii.2014, 1 female ovipositing on *Pelargonium* sp. (Plates 1 & 2) (observed and collected; coll. NMNH-Sofia). The habitat is urban with many *Pelargonium* plants grown outside (Plate 3).

Plate 3. Habitat of *Cacyreus marshalli.* Plants of *Pelargonium* in pots in a domestic garden at Levunovo, Bulgaria.

In spite of an earlier extensive literature search, the species has remained unrecorded for the Bulgarian fauna (Abadjiev, 2001) and these reports are evidently the first for the country.

The closest known locality of the species is Thessaloniki, Greece, some 90 km distant.

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Fenestral egg-laying in an Angle Shades moth *Phlogophora meticulosa* (L.) (Noctuidae) and an escape tactic in the Swallow-tailed moth *Ourapteryx sambucaria* (L.) (Geometridae)

In the early evening of 19 October 2013, I was sitting in Mumu's Gelateria Café, Little Clarendon Street, Oxford (O. S. Grid Reference SP51000693), when I became distracted by a moth flying up and down the outside of the window pane next to me. At intervals it paused briefly from its futile attempts to reach the lights inside the café and laid an egg on the glass. I watched it continue this activity for several minutes, until it desisted and dropped down to the pavement immediately outside the café.

Adjourning to the exterior, I identified the moth as an Angle Shades, and counted 16 eggs on the window pane, all solitary and widely separated.

A moth in captivity will often lay eggs in the absence of its host plant, which I have always assumed was due to the gravid female being desperate to lay and unable to "hold on" any longer. However, in the case of my café observation, the moth was not captive, except by its attraction to the light, which lasted only a few minutes. According to Skinner (1984, *Colour identification guide to moths of the British Isles*. Viking), the Angle Shades is associated with a wide variety of wild and cultivated plants, and there is no shortage of vegetation in this part of Oxford. So why did the insect choose to lay on the glass rather than on a nearby, viable host plant? It is possible that either the light, the glass or a combination of the two acted as a cue to egg-laying, which the moth confused with those that stimulate natural oviposition.

Since my youth, I have not studied the Lepidoptera and fenestral egg-laying may be a common observation amongst more avid students of these insects. However, I report my record in case it is of value to those interested in insect behaviour. The phenomenon, if common, may be useful in understanding how natural oviposition is stimulated in this species, or more generally in moths.

Whilst on the subject of interesting moth behaviour, I recall an example from my youth, which may not have been widely observed due to the heavy reliance upon the use of light traps to study nocturnal Lepidoptera. As a boy, growing up in Hull, East Yorkshire, I would collect moths at dusk by beating the bushes that lined the access road at the back of the terraced houses where I lived (which was referred to locally as a 'tenfoot'). Some species would drop to the ground upon being disturbed, and were difficult to find. Others would take flight, and I would give chase with my net. A great prize was the Swallow-tailed moth, which was easily seen as it flew due to its bright, ghostly appearance in the twilight. However, as I got close, the moth was liable to change direction abruptly and appear to fly over the top of the bushes, where I could not follow. With experience, I learned that the moth had, in fact, not escaped but done a "hand-brake turn" into the bushes, and could be found settled within the twigs and foliage, close to where it had disappeared from view. Several years later, in the cinema watching *Star Wars: The Empire Strikes Back*, I was surprised to see a similar tactic being used by the Millennium Falcon to escape from a close encounter with an Imperial Star Destroyer. The Falcon appeared to have jumped to Lightspeed, but instead had halted as it passed and clamped itself to the side of the ship. Yet another example of man reinventing nature!

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Bisigna procerella (D.& S., 1775) (Lep.: Oecophoridae): New to Suffolk

With night-time temperatures on Friday 18 July 2014 not expected to drop much below 20°C I switched on my 11 Watt actinic Skinner trap and kept my fingers crossed for another good moth catch. Similar conditions over the previous few nights had already added Birch Mocha *Cyclophora albipunctata* and Dark Sword-grass *Agrotis ipsilon* to my Woolpit garden list. Having been woken at around 4 am by an approaching thunderstorm, I rushed outside to cover the trap up as best I could before retiring to the house to wait for the rain to pass. Examining the trap contents a few hours later things got off to a good start when I spotted a Tree-lichen Beauty *Cryphia algae* (Fabr.), a species that is now well established in south-east Suffolk, and a much anticipated addition to the garden list. Carefully turning over another egg-tray I noticed a small, orange micro that I knew needed potting up. Back indoors, and with reference to Sterling, Parsons and Lewington (2012. *Field Guide to the Micro-Moths of Great Britain and Ireland.* British Wildlife Publishing), I quickly identified the moth as an example of *Bisigna procerella.*

Having been first recorded in England at Hamstreet, Kent, in July 1976 (Chalmers-Hunt and Agassiz. 1976. *Schiffermuelleria procerella* (D.& S., 1775) (Lep: Oecophoridae): A Species New to Britain, *Entomologist's Rec. J. Var.* **88**: 211-212), *procerella* now appears to have become established within a small number of woods in Kent and East Sussex. On carrying out further searches of available literature and on-line resources the significance of my capture began to sink in as I could only track down a number of other scattered records, all from coastal locations in Kent. The record from Woolpit therefore appears to represent not only a new species to Suffolk, but is also the first time that *procerella* has been recorded away from these two southern counties. A similar view was expressed by John R. Langmaid (in litt.) who very kindly responded to my request for information on the British status of this species. While its origin is unknown, the appearance of this moth in my garden trap coincided with start of a busy period of migrant Lepidoptera activity. This may hint at a European origin.

My thanks go to John Langmaid and to Matthew J. Deans for his helpful comments on an earlier draft of this note and also for his help in setting the specimen which now resides in his private collection.

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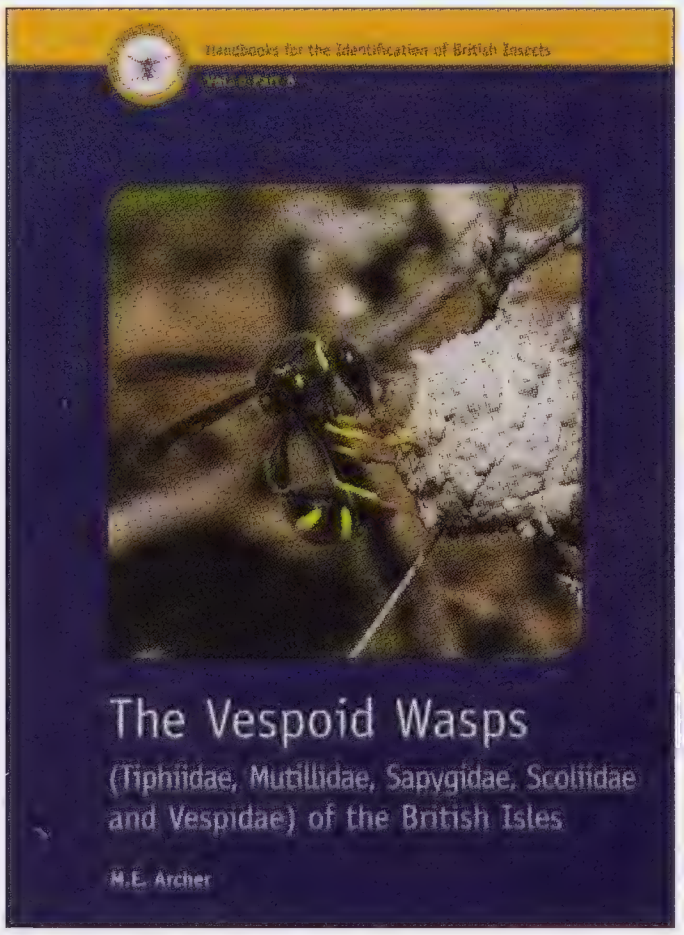
BOOK REVIEWS

The vespoid wasps (Tiphiidae, Mutillidae, Sapygidae, Scoliidae and Vespidae) of the British Isles by **M. E. Archer**. *Handbooks for the Identification of British Insects* **6**(6): 1-82. Series Editor Mike Wilson. Published for the Royal Entomological Society, 2014, by the Field Studies Council, Preston Montford, TF3 3BB (or order via *http://www.field-studies-council.org/publications/pubs/the-vespoid-wasps.aspx*). Paperback, 175 x 244 mm, ISBN: 978 0 901546 98 2. £25.50 (Fellows of the Royal Entomological Society should ask for their usual discount).



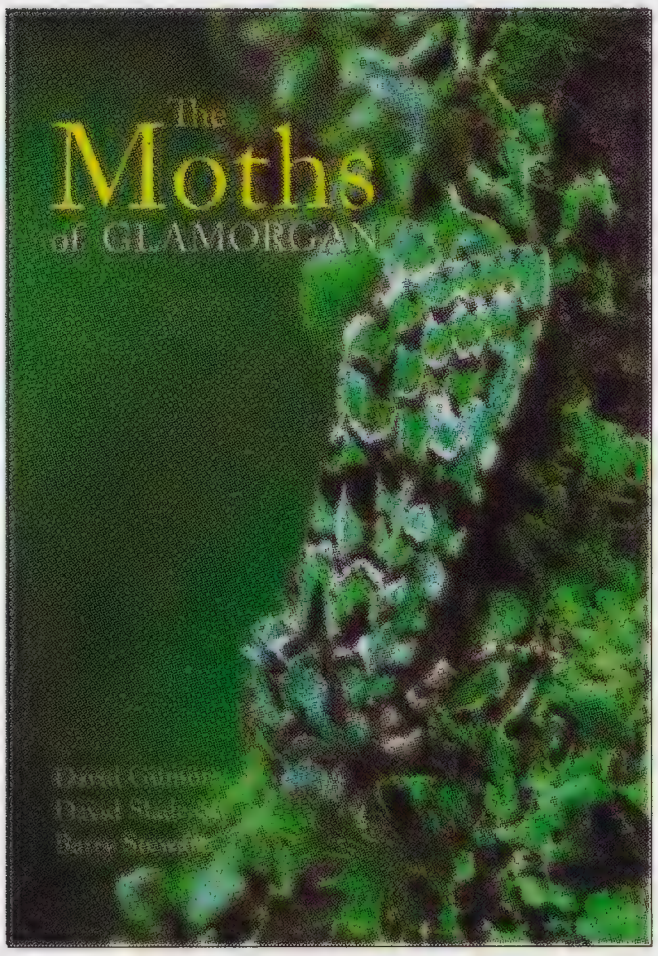
The success of the Bees, wasps and Ants Recording Society (formerly Recording Scheme) has always been a bit of a mystery to this reviewer, because access to comprehensive and up-to-date identification keys for the British aculeate fauna has been a significant problem. The dedicated will eventually be able to pull together most published bits and pieces, but a comprehensive guide is lacking whilst some groups such as the bee genera *Andrena* and *Lasioglossum* seem to have been completely forgotten; non-specialists will find this a problem. This guide to vespoid wasps by Mike Archer is, therefore, a most welcome contribution to the literature.

Important body parts referred to in the keys are drawn and named and a checklist of the 45 species covered is presented before embarking upon the identification keys. These keys are presented clearly and are easy to both follow and interpret; helpful drawings with appropriately positioned arrows accompany almost all the couplets and there is non of that awful 1950s and earlier technical stuff that could only be understood by experts who didn't actually need keys in the first place. There are helpful accounts of each species and finally colour illustrations of the insects.

The author is a well-known and respected expert in the group and unsurprisingly it is difficult to fault the work. I observe that his earlier work on some members of the group (Archer, 2000. *The British Potter and Mason Wasps*: *A Handbook*. ISBN: 0 9537992 9 8), included distribution maps; it is a pity that these were not included in the reviewed work. Our knowledge of distribution has improved considerably in recent years and although some of the maps are available elsewhere it would have been nice to include them in the same place as all the other information presented.

COLIN W. PLANT

The moths of Glamorgan by **David Gilmore, David Slade and Barry Stewart**. 424 pp., 32 colour plates, hardbound, 175 x 248 mm, ISBN 978 0 9551086 3 1. Atropos Publishing, 2014. £40.



This meaty volume is a welcome addition to the growing list of county moth fauna. On the outside it is attractively presented; on the pages within it does not disappoint.

Glamorgan, we are told, is the second largest Welsh county. It rests in the south-east of Wales which is home to over half of the entire Welsh human population, yet it still supports some excellent semi-natural habitat. From the shoreline in the south, via saltmarsh and sand dune, across the reed beds and peatlands, over the lowland grassland and broad-leaved woodland to the upland grassland and heath and finally the montane zone, this is a county with much to offer. Just over 1500 species are recorded (the exact number seems to be a secret?); 616 are "macros" and of these 551 are resident. The species accounts for most of the macros are accompanied by both tetrad-based distribution maps and adult flight period histograms. Micros are treated to the briefest of accounts. Rejected records are gathered into the appendices where may also be found lists of species added to the Glamorgan fauna since 2010 and adventive species.

The sequence and nomenclature follow the familiar Bradley and Fletcher numbered checklist. It is a difficult book to fault as it faithfully reports a summary of existing knowledge. The treatment of *Ectropis* (it states that there are definitely two species) is at odds with current thinking, but this and other similar taxonomic niceties are not really the interest of the target audience of this book.

This is an important contribution to the literature and all serious moth-ers will without doubt wish to own a copy.

COLIN W. PLANT

Also received …

Beetles of Eastern North America by **Arthur V. Evans**. 560 pp., 205 x 255 mm., paperback, ISBN 978 0 691133 0 41. Princeton University Press, 2014. $35 (£24.95).

This large book provides an excellent overview of the beetles of the eastern part of the northern American continent. Although the area covered does not appear to be defined, it is clear from the text that both Canada and the USA are covered. Hardened coleopterists will inevitably wish to obtain identification keys, should they desire to name species correctly, but this book will surely appeal to all who wish to gain a general overview. The work is copiously illustrated and many species may be adequately distinctive to allow this book a place amongst the various important identification guides to the group.

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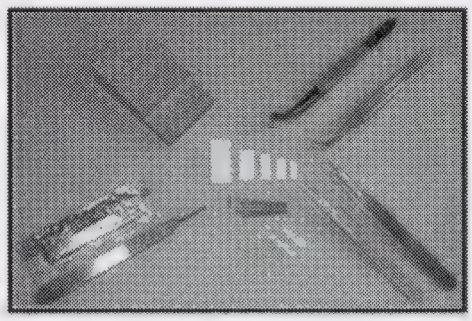

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Front cover image of *Pyrrhia umbra* (Hufn.), from photograph © by Tom Tams

MICROLEPIDOPTERA REVIEW OF 2013

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Abstract

Noteworthy records of microlepidoptera recorded during 2013 are summarised, including two species new to the British Isles and numerous new vice-county records.

Introduction

Following the cold and wet conditions in 2012, it was a relief to return to a year in 2013 that, at least taken overall, was closer to the long term climatic average. The mean yearly temperature was almost exactly that of the previous 30 years and the overall rainfall was around 95% of the average. However, there were obvious seasonal and regional variations. The winter was long and the spring unseasonally cold, especially March, which was the second coldest on record. However, the summer recovered well and July was particularly hot, being the third warmest ever measured. Atlantic storms then brought some wet and windy periods in the autumn and early winter and December was the wettest month ever experienced in Scotland.

In regional terms the areas which were sunnier than usual were the central western Highlands and to a lesser extent the north Midlands and this was reflected in a warmer than usual year in the Highlands. In contrast, the south-east and central southern areas of England were slightly cooler than usual. Allowing for the autumn storms, the places that were drier than expected were the Moray Firth and north-east Scotland, central northern England and East Anglia.

Two species were found as new to the British Isles. *Helcystogramma triannulella* (Herrich-Schäffer) was found in the Isles of Scilly in October 2013 and *Blastobasis maroccanella* Amsel was discovered in various months at Southsea. The latter species continues the amazing discovery of new *Blastobasis* species in southern Britain. How and why they are establishing themselves is not known.

New to Ireland is *Bucculatrix thoracella* (Thunberg). It has certainly been extending its range in Britain but it is not clear whether it is a recent invader of Ireland, or merely an overlooked species, whereas it is more likely that this last applies to another Irish discovery, *Coleophora ahenella* Heinemann. The third Irish addition, *Cameraria ohridella* Deschka & Dimic is certainly a new arrival, continuing its rapid spread.

A rather unlikely overlooked species is *Elachista orstadii* Palm. This species is well known from various locations in Scotland and it was a real surprise when it was found new for England in the Cotswolds, where it is now known from several grasslands. Another remarkable record is that of *Tenaga nigripunctella* (Haworth), previously thought to be extinct in England, which was found on a farm in Dorset.

Etiella zinckenella (Treitschke) was recorded as new to Wales. One species is noted as new to Scotland and this was a delayed discovery; in 1993, a *Pammene* species was found in north-east Scotland but could not be identified, even following dissection. However, it was recently diagnosed by L. Aarvik as *P. ignorata* Kuznetzov. This species has now been recorded from a small number of diverse locations in Britain and it is clearly under-recorded.

Although there were rather few species discovered new to the component countries of Britain, six further species deserve special mention. *Kessleria fasciapennella* (Stainton) had only previously been recorded near Edinburgh, but in 2013 a specimen was found in a Rothamsted Light Trap in Glen Coe and attempts are now being made to find larvae. *Scrobipalpa pauperella* (Heinemann) was originally found at Chippenham Fen but further searches failed to re-find it and it was considered to be extinct, so that it was a real surprise for it to be discovered in Yorkshire. Another species found well outside its normal range is *Coleophora linosyridella* Fuchs. This is normally restricted to Essex and Kent but was found in Devon in 2013, as cases on *Aster lynosyris,* which is a new foodplant.

Another species thought to be extinct was *Aethes margarotana* (Duponchel), a coastal species recorded from Kent, Essex and last reported from Suffolk. Its foodplant is strictly coastal, so that its occurrence inland in Buckinghamshire is a puzzle and likely to represent a stray individual. *Gravitarmata margarotana* (Heinemann) is a recent addition to the British list, having been found in Kent in 2011. It has now been found in Leicestershire but the likely food stuff, twigs and cones of conifers, offers no clue as to whether it is resident. Finally it is very welcome to report that *Cydia corollana* (Hübner) has been re-found in Huntingdon at Monks Wood, in the general area where it has been found very sparingly in the past.

The new checklist was published in 2013 (Agassiz, D.J.L., Beavan, S.D. and Heckford, R.J. 2013. *A checklist of the Lepidoptera of the British Isles.* Royal Entomological Society) and we have chosen to use their new nomenclature and family and species order. They have adopted a new numbering system, with each family given a main number, followed by a consecutive number for each species within that family, so that the result has the appearance of a decimal number. However, microlepidopterists have become very familiar with the numbers used in the checklist prepared by Bradley (Bradley, J.D. 2000. *Checklist of Lepidoptera recorded from the British Isles.* Privately published), which we have used in previous reviews. To help readers cross-refer between the two checklists we have placed the 'Bradley number' in italics after the new 'ABH number'. In the 2014 review we intend to use just the new numbers. We do hope that this will allow readers to understand clearly which species are being listed here.

In the 2012 review we noted that Butterfly Conservation was actively searching for funds to allow digitisation and web-based display of all of the micro-moth distribution maps. (Digitised maps of the Scottish micro-moth Vice-county distribution are already available for inspection on the East Scotland Butterfly Conservation webpage, thanks to kind help from Mark Cubitt, showing what we hope can be achieved for the whole

of the British Isles, and these are updated each year.) We are delighted to note that some resources were found, which have allowed every map to be photographed and these are now loaded onto the main Butterfly Conservation web-site at *http://www.mothscount.org/text/108/micro_moth_distribution_maps.html.* However, only about half of the maps have been digitised so far and BC is now trying to find the funds to digitise the rest.

If the maps are inspected there are one or two tabs available for each. All of them have a pdf file available, labelled 'Record card' , which is the photograph of the VC map, plus the reverse of the map sheet. For those for which the map has been digitised, the second tab is labelled 'Map'. The actual Record card maps just show a dark spot in each Vice-county for which a record exists and these are exactly repeated on the digitised map. When the original maps were prepared, for use in the early volumes of the Moths and Butterflies of Great Britain and Ireland series, spots were often added to the maps with no details of the underlying records on the reverse sheet. However, more recently details have always been added on the reverse, to support the map spots, and so inspection of the reverse sheets can sometimes help the reader to find the origin of the VC spot. Generally just the first occurrence is detailed.

Once all the maps have been digitised then it will be possible to update the 'Map' tab annually, whereas the 'Record card' maps are fixed photographs of the situation in 2013 and so cannot be updated. We hope that full digitisation will happen soon and we will then provide two files each year for the updating process. One file will be the text of the published review, which lists the new VC records made in each specified year. The second file will be similar, except that it will include the unpublished but new VC records that have been submitted to us as records from earlier years. Each year many recorders send us these new but 'old' records and we routinely use these in our own manual updating of the master-maps. This should ensure that older records are included in each year's update, so please will recorders inspect the 'Record card' maps and if they notice that they can add new but 'old' records, please can they send these to us, so that they can be included in future.

Please may we now ask for many more records from 2014, arranged in our standard format and with a national grid reference, and the easiest way for us to receive these is as a **WORD file** to **JRL**. **Please do not submit records in spreadsheets**, as these then require extensive editing and retyping, adding enormously to the task of preparing the review. Thank you to so many enthusiasts, whose records make this such an extensive and important contribution, and especially to Ian Thirlwell for help with the tedious task of checking and collating the new records.

The 2013 records have come from the following recorders, each indicated in the text by his or her initials. Other recorders are named in full. D.J.L. Agassiz, M.V. Albertini, D. Allen, T.J. Barker, H.E. Beaumont, S.D. Beavan, K.P. Bland, A.G. Blunt, K.G.M. Bond, S.D.S. Bosanquet, P.A Bowyer, T. Bryant, D. Budworth, P.J. Clarke, V.F. Clarke, G.A. Collins, M.F.V. Corley, N.W. Cottle, G. Crittenden, M.J. Dale, A.M. Davis, D.W.W. Davidson, M.J. Deans, B. Dickerson, D. Emley, M. Evans, C.H. Fletcher, T.H. Freed, S. Gauld, A.N. Graham, J.E. Graham, M.J. Gray, N. Gregory,

P.R. Hall, M. C. Harvey, P. Harvey, R.J. Heckford, G. Hedges, B.P. Henwood, S.H. Hind, R. Homan, J.B. Kemp, J.T. Knowler, J.R. Langmaid, A.D. Lewis, N. Littlewood, J. McLean, , D.V. Manning, L. Marsden, A. Masterman, G.H.J. Meredith, N. Money, K.A. Naylor, B. Neath, E. O'Donnell, S.M. Palmer, M.S. Parsons, T. & D Pendleton, C.W. Plant, J. Porter, B. Prater, C.R. Pratt, T. Prescott, A.W. Prichard, , S.A. Rolls, A. P. Russell, I.S. Scott, A.N.B. Simpson, R. Singleton, A. Skeates, D.J. Slade, E.G. Smith, M.H. Smith, P.H. Sterling, N.J. Stone, J. Stoneman, T.J. Tams, M. Taylor, R. Taylor, R. Terry, G.M. Tordoff, L.A.C. Truscott, M.J. Wall, J.R. Wheeler, P.R. Williams, J.E. Young and M.R. Young.

New vice-county records are shown with the VC number both underlined and in **bold** type. Journals are abbreviated as follows: *Ent. Rec.* for *Entomologist's Record and Journal of Variation*; *Ent. Gaz.* for *Entomologists' Gazette*; *BJENH* for *British Journal of Entomology and Natural History*; and *Atropos* is named in full. RIS refers to the Rothamsted Insect Survey, SEM to Scottish Entomologist's Meeting and VCH to Victoria County History.

SYSTEMATIC LIST

MICROPTERIGIDAE

01.003 *0003* *Micropterix aureatella* (Scop.) — Martinshaw Wood SK508069 (55) 31.v.2013, first record since VCH – H.A. Peacock *per* APR

01.005 *0005* *M. calthella* (Linn.) — Ness Wood C499111 (**H40**) 19.vi.2013 — KGMB

ERIOCRANIIDAE

02.002 *0007* *Paracrania chrysolepidella* (Zell.) — Clunton Coppice SO3480 (**40**) vacated mine on *Corylus avellana* 10.vi.2013, conf. ANBS — AGB

02.005 *0010* *Eriocrania salopiella* (Staint.) — Drimeenagun R561744 (**H9**) tenanted mine on *Betula* 3.vi.2013 — KGMB; Gortin Glen H495840 (**H36**) tenanted and vacated mines on *Betula pubescens* 18.vi.2013 — KGMB; Murlough Bay D190427 (**H39**) vacated mine on *Betula pubescens* 14.vii.2013 — KGMB; Ness Wood C501109 (**H40**) vacated mine on *Betula pubescens* 19.vi.2013 — KGMB

02.008 *0012* *E. sangii* (Wood) — Skipwith Common SE6437 (**61**) tenanted mines on *Betula* sp. 19.v.2013 — CHF; Ballintlea South R652136 (**H5**) genitalia det. KGMB 6.iv.2013 — KGMB; Coolready R667649 (**H8**) tenanted mines on *Betula pubescens* 24.v.2013 — KGMB

NEPTICULIDAE

04.002 *0089* *Stigmella lapponica* (Wocke) — Glashaboy South W627867 (**H5**) vacated mines on *Betula pubescens* 10.viii.2013 — KGMB; Lough Derg (Tievetooey) H086763 (**H34**) vacated mine on *Betula pubescens* 16.vii.2013 — KGMB

04.003 *0117* *S. confusella* (Wood) — Marblehill Plantation M685044 (**H15**) vacated mines on *Betula pubescens* 22.ix.2013 — KGMB

04.004 *0090* *S. tiliae* (Frey) — Westcott SP7117 (**24**) vacated mines on *Tilia x vulgaris* 22.x.2013 — D.L. Wilton *per* MVA; Swithland Wood SK540118 (**55**) vacated mines on *Tilia cordata* 21.ix.2013 — APR

04.009 *0115* *S. alnetella* (Staint.) — Middletown SJ305121 (**47**), tenanted mine on *Alnus glutinosa* 12.x.2013, det. PRW — D. Boyes *per* PRW; Kirkcolm NX0368 (**74**) 24.ix.2013 tenanted mines on *Alnus* sp. — K. McCabe *per* KAN

04.010 *0111* *S. microtheriella* (Staint.) — Belfast (Ormeau Pk) J346724 (**H38**) vacated mines on *Corylus avellana* 13.xi.2013 — KGMB

04.012 *0102* *S. aceris* (Frey) — Purdis Farm TM208434 (**25**) mines on *Acer campestre* 14.ix.2013 — N. Sherman per AWP;Raydon TM046832 (**26**) mines on *Acer campestre* 24.ix.2013 — AWP; Bidford on Avon SP0951 (**38**) vacated mine on *Acer campestre* 26.ix.2013 — RH *per* NJS

04.018 *0080* *S. ulmivora* (Fol.) — Flatts Lane Country Park NZ5516 (**62**) vacated mine on *Ulmus glabra* 17.x.2013 — CHF & R. Woods; Ballyduff W669987 (**H5**) vacated mines on *Ulmus* sp. 9.xi.2013 — KGMB

04.022 *0107* *S. regiella* (H.-S.) — Pant-y-llyn SN605166 (**44**) mines on *Crataegus* sp.29.ix.2013 — SDSB

04.024 *0104* *S. magdalenae* (Klim.) — Ballintlea South W650115 (**H5**) mines on *Sorbus aucuparia* 26.vii.2013 — KGMB

04.025 *0103* *S. nylandriella* (Tengst.) — Ballintlea South W650115 (**H5**) mines on *Sorbus aucuparia* 26.vii.2013 — KGMB

04.026 *0100* *S. oxyacanthella* (Staint.) — Kirkcolm NX0369 (**74**) 24.ix.2013 mines on *Crataegus* sp. — K. McCabe *per* KAN

04.028 *0091* *S. minusculella* (H.-S.) — St Ives TL305708 (**31**) vacated mines on *Pyrus communis* 12.viii.2013 and tenanted on 26.ix.2013 — BD

04.032 *0075* *S. floslactella* (Haw.) — Tattynure H438800 (**H36**) vacated mines on *Corylus avellana* 29.viii.2013 — KGMB

04.035 *0068* *S. salicis* (Staint.) — Crom Estate H359243 (**H33**) vacated mine on *Salix* sp. 23.ix.2013 — KGMB

04.036 *0072* *S. myrtillella* (Staint.) — Derryhoo H408187 (**H30**) vacated mines on *Vaccinium myrtillus* 24.ix.2013 — KGMB

04.038 *0070* *S. obliquella* (Hein.) — Lurgan Park J086590 (**H37**) mine on *Salix fragilis* ix.2013, det. D. Grundy — K. Stewart *per* JMcC

04.040 *0074* *S. assimilella* (Zell.) — Allerthorpe Common SE7548 (**61**) vacated mine on *Populus tremula* 24.x.2013 — CHF; Fersit NN352778 (**97**) 4.viii.2013 — P. Moore & H. Swift *per* TP

04.043 *0063* *S. lemniscella* (Zell.) — Dunskey Glen NW9955 (**74**) 22.ix.2013 vacated mines on *Ulmus* sp. — K. McCabe *per* KAN

04.049 *0055* *S. aeneofasciella* (H.-S.) — Dolgoch quarry SJ277247 (**40**) vacated mines on *Agrimonia eupatoria* 1.x.2013, conf. ANBS — D. Knight *per* AGB

04.051 *0059* *S. poterii* (Staint.) — Musheramore W337861 (**H4**) vacated mine on *Potentilla erecta* 3.ix.2013 — KGMB

04.052 *0058* *S. filipendulae* (Wocke) (= *ulmariae* Wocke) — Ballyhornan J589409 28 (**H38**) mine on *Filipendula ulmaria* 28.ix.2013, det. JRL — K. Stewart *per* JMcC

04.055 *0081* *S. hemargyrella* (Kollar) — Commins Coch SH845028 (**47**) vacated mine on *Fagus sylvatica* 1.xi.2013 — PRW

04.057 *0085* *S. suberivora* (Staint.) — Sleaford TF076463 (**53**) vacated mines on *Quercus ilex* 4.xi.2012 — MJG

04.058 *0089* *S. basiguttella* (Hein.) — Allerthorpe Common SE7548 (**61**) tenanted mines on *Quercus* sp. 24.x.2013 — CHF

04.059 *0087* *S. svenssoni* (Johansson) — Barnet TQ258967 (**21**) 21.viii.2013, male genitalia det. — RT

04.060 *0084* *S. ruficapitella* (Haw.) – Meanwood, Leeds SE2838 (**64**) tenanted mine on *Quercus* sp 15.xi.2012, moth bred, genitalia det. — CHF

04.061 *0082* *S. atricapitella* (Haw.) — Blarney W614760 (**H4**) tenanted mines on *Quercus robur* 1.xi.2013 — KGMB

04.067 *0045* *Trifurcula subnitidella* (Dup.) — Nailsworth ST8599 (**34**) 3.vi.2013 — GHJM; Morfa Harlech SH559345 (**48**) 3.vii.2013, genitalia det. ANG — ANG, JEG

04.068 *0046* *T. immundella* (Zell.) — Lynford TL8294 (28) 27.vii.2013, male genitalia det. JRW, first VC record since 19thC — S. Wright *per* JRW

04.071 *0040* *Bohemannia pulverosella* (Staint.) — Knoppoge Bridge W582962 (**H5**) vacated mines on *Malus sylvestris* 26.x.2013 — KGMB

04.072 *0019* *B. quadrimaculella* (Boh.) — Tywyn (south of) SN593979 (**48**) swept from *Alnus glutinosa* 3.viii.2013 — ANG & JEG; Montiaghs Moss (**H39**) 6.vii.2013, genitalia det. KGMB — E. Rolston *per* JMcC

04.074 *0021* *Ectoedemia sericopeza* (Zell.) — Lynford TL8294 (**28**) mine on samara of *Acer platanoides* 28.vii.2013, moth bred— I. Barton & K. Rosewarne *per* JRW; Whitehaven SJ272243 (**40**) mines in keys of *Acer platanoides* 1.x.2013, conf. ANBS — D. Knight *per* AGB

04.075 *0022* *E. louisella* (Sirc.) — Sapcote SP492939 (**55**) 11.vii.2013, genitalia det. J. Clifton — G.E. Calow *per* APR

04.076 *0020* *E. decentella* (H.-S.) — Freshwater SZ3386 (**10**) 5.ix.2013, det. T.J. Norriss — D. Cooke *per* MJW; Irchester CP SP9166 (**32**) 5.vi.2013 — J. Skinner *per* DVM; Swarland NU165035 (**68**) 12.vii.2013, conf. TJT — A.J. Fairclough *per* TJT

04.082 *0025* *E. intimella* (Zell.) — Roundton Hill NR SO293946 (**47**), tenanted mines on *Salix caprea*, 23.ix.2013, D.G. Green *per* PRW

04.084 *0024* *E. turbidella* (Zell.) — Hockwold TL7388 (**28**) mines on *Populus canescens* 30.xi.2013 — I. Barton & K. Rosewarne *per* JRW

04.085 *0023* *E. argyropeza* (Zell.) — Hailey Park ST141796 (**41**) tenanted mines on *Populus tremula* 24.xi.2013 — GMT; Middletown SJ305121 (**47**) vacated mine on *Populus tremula* 29.ix.2013, det. PRW — D. Boyes *per* PRW; Newport, Hull SE6530 (**61**) tenanted mines on *Populus tremula* 20.x.2013 — A. D. Nunn *per* HEB

04.088 *0036a* *E. heringella* (Mariani) — Longdon Manor SO8430235050 (**37**) vacated mines on *Quercus ilex* 11.v.2013 — RH *per* ANBS; Sleaford T076463 (**53**) vacated mines on *Quercus ilex* 4.i.2013 — MJG

04.089 *0037* *E. albifasciella* (Hein.) — Torrs Warren NX1456 (**74**) 23.ix.2013 mines on *Quercus* sp. — K. McCabe *per* KAN

04.091 *0039* *E. heringi* (Toll) — Church Stoke SO279938 (**47**), tenanted mines on fallen leaves of *Quercus petraea* 13.xi.2013 — D.G. Green *per* PRW

04.093 *0026* *E. agrimoniae* (Frey) — Temple Golf Course SU8483 (**22**) cocoons in mines on *Agrimonia eupatoria* 2 xii 2013 — D.J. White *per* MCH

04.096 *0030* *E. arcuatell*a (H.-S.) — Dolgoch quarry SJ277246 (**40**) vacated mines on *Fragaria vesca* 1.x.2013 conf. ANBS — D. Knight *per* AGB

04.100 *0035* *E. minimella* (Zett.) — Tattynure H438800 (**H36**) tenanted mines on *Betula pubescens* 29.viii.2013 — KGMB

OPOSTEGIDAE

05.001 *0119* *Opostega salaciella* (Treits.) — Cheltenham SO9424 (**33**) 26.vii.2013 — RH; Kildary NH7775 (**106**) 9.vii.2013, conf. MRY — N. Richards *per* MRY

HELIOZELIDAE

06.005 *0157* *Heliozela hammoniella* Sorh. — Marblehill Plantation M685044 (**H15**) vacated mine on *Betula pubescens* 22.ix.2013 — KGMB

ADELIDAE

07.003 *0146* *Nemophora cupriacella* (Hübn.) — Whisby Nature Reserve SK911668 (**53**) 12.vii.2012 — MJG

07.004 *0144* *N. fasciella* (Fabr.) — Kingsthorpe SP7463 (**32**) 7.vii.2013 — D.R. Sharpe *per* DVM

07.008 *0151* *Adela croesella* (Scop.) — Ffynnon Gynydd SO161409 (**43**) 28.vi.2013 — PJC & VFC; Middletown SJ305121 (**47**) adult to light 1.vii.2013, conf. PRW — D. Boyes *per* PRW

07.010 *0152* *Cauchas rufimitrella* (Scop.) — Carrickavrantry S555029 (**H6**) 6.vi.2013 — TB

07.012 *0141* *Nematopogon. schwarziellus* Zell. — Ballinruane R399305 (**H8**) 19.v.2013 — KGMB

07.013 *0143a* *N. magna* (Zell.) — Coire Fee NO2575 (**90**) 7.vi.2013, det. MRY — P Brooks *per* MRY

INCURVARIIDAE

08.001 *0129* *Incurvaria pectinea* Haw. — Coom Bridge, Doonpeter W683899 (**H5**) tenanted mines on *Betula pubescens* 15.vi.2013 — KGMB; Ballyscanlan S541029 (**H6**) vacated mines on *Alnus glutinosa* 5.ix.2013 — TB; Gortin Glen (New Bridge) H495840 (**H36**) tenanted mines on *Betula pubescens* 18.vi.2013 — KGMB; Muff Glen C525187 (**H40**) mines on *Alnus glutinosa* 20.vi.2013 — KGMB

08.004 *0132* *I. praelatella* ([D. & S.]) — Tregaron SN6862 (**46**) 7 vii 2013 — D. Grundy *per* PRH; Weydale ND147647 (**109**) 15.vii.2013 — A. McBay *per* NM

08.005 *0128* *Phylloporia bistrigella* (Haw.) — Derryhoo H408187 (**H30**) vacated mines on *Betula pubescens* 24.ix.2013 — KGMB

PRODOXIDAE

09.005 *0134* *Lampronia flavimitrella* (Hübn.) — Knighton Wood SU058220 (**8**) 22.v.2013 — A.G. Duff *per* EGS & MHS, *Ent. Rec.* **125**: 143

09.006 *0138* *L. fuscatella* (Tengst.) — Lower Cwmhir SO039706 (**43**) 25.vi.2013 — PJC & VFC

TISCHERIIDAE

10.002 *0124* *Tischeria dodonaea* (Staint.) — Middletown SJ305121 (**47**) mines on *Quercus* sp. 20.x.2013, det. PRW — D. Boyes, *per* PRW

10.003 *0125* *Coptotriche marginea* (Haw.) — Graig Upper R657129 (**H5**) tenanted mines on *Rubus fruticosus* agg. 21.v.2013 — KGMB; Finaghy, Belfast. J311699 (**H39**) 20.vii.2013, det. KGMB — C. Mellon *per* JMcC

10.006 *0127* *C. angusticollella* (Dup.) — Ketton Quarry SK9705 (**55**) mines on *Rosa* sp. 8.ix.2013 — K. Palmer *per* APR

PSYCHIDAE

11.001 *0180* *Diplodoma laichartingella* (Goeze) — Old Weston TL099774 (**31**) in Malaise trap 8.vi.2013, genitalia det. — K. Royles *per* BD; Ballyscanlan S537025 (**H6**) 27.vi.2013 — TB

TINEIDAE

12.002 *0201* *Tenaga nigripunctella* (Haw.) — East Creech Farm, Purbeck SY932828 (9) 9.viii.2013, first British record since 1934; previously believed to have been extinct since then — RT

12.006 *0203* *Infurcitinea argentimaculella* (Staint.) — Holme Fen TL1990 (**31**) larval tubes in *Lepraria* sp. on trunk of *Betula* sp.15.iv.2013 — BD; Ballyscanlan S548026 (**H6**) 5.viii.2011, genitalia det. KGMB — TB

12.010 *0196* *Morophaga choragella* ([D. & S.]) — North Ferriby TA0026 (**61**) 17.vii.2013 — I. Marshall *per* HEB

12.016 *0216* *Nemapogon cloacella* (Haw.) — Craignure, Isle of Mull NM715373 (**103**) 7.vi.2013, conf. MRY — AS

12.017 *0217* *N. wolffiella* Karsholt & Nielsen — Sutton Wood SJ711016 (**40**) 14.viii.2013, male genitalia det. M. J. Hull — K.C. Fowler *per* AGB

12.035 *0238* *Niditinea. striolella* (Matsumura) — Bromham TL0051 (**30**) 9.vii.2013, genitalia det. DVM — P. Almond *per* DVM

12.036 *0227* *Monopis laevigella* ([D. & S.]) — Carrowmenagh C837039 (**H40**) 13.vii.2013, genitalia det. — KGMB

12.038 *0229* *M. obviella* ([D & S.]) — Shifnal SJ748071 (**40**) 6.vii.2013, det. AGB — P.E. Watts *per* AGB

12.039 *0230* *M. crocicapitella* (Clemens) — West Derby SJ4192 (**59**) 6.x.2013 — C. Daly *per* SMP

12.047 *0199* *Psychoides verhuella* Bru. — Old Weston TL099777 (**31**) larvae on *Phyllitis scolopendrium* 23.iv.2013 — K. Royles *per* BD; Kingsthorpe SP7564 (**32**) larval cases on *Phyllitis scolopendrium* 28.iv.2013, moth bred — J.A. Richardson per DVM

12.048 *0200* *P. filicivora* (Meyr.) — Glasbury SO180390 (**43**) 9.vi.2013 — PJC & VFC; Durham NZ2741 (**66**) larva on *Asplenium scolopendrium* 16.xi.2013 — RH *per* TJB

ROESSLERSTAMMIIDAE

13.002 *0447* *Roeslerstammia erxlebella* (Fabr.) — Ynys-hir SN6896 (**46**) 15 viii 2013 — D. Williamson & M. Whiteside *per* PRH

BUCCULATRICIDAE

14.003 *0267* *Bucculatrix maritima* Staint. — Glencaple NX995688 (**72**) 2.ix.2013 — A. Robertson *per* KAN

14.007 *0271* *B. albedinella* (Zell.) — Roundton Hill NR SO293946 (**47**) vacated mines on *Ulmus glabra* 23.ix.2013 — D.G. Green *per* PRW

14.008 *0272* *B. cidarella* (Zell.) — Gerah Bridge V875741 (**H1**) 29.vi.2013, genitalia det. — KGMB; Tattynure H438800 (**H36**) vacated mines on *Myrica gale* 29.viii.2013 — KGMB

14.009 *0273* *B. thoracella* (Thunb.) — West Jesmond NZ253675 (**67**) 2.ix.2013, conf. TJT — M.J. Cook *per* TJT; Cork City W663713 (**H4**) vacated mine on *Tilia petiolaris* 4.xi.2013 — KGMB; Dublin O1515037133 (**H21**) vacated mines on *Tilia cordata* 24.x.2013 — DA; Forestside, Belfast J353705 (**H38**) vacated mines on *Tilia* sp. 5.ix.2013 — DA; Belfast J328722 (**H39**) vacated mines on *Tilia* sp. 18.viii.2013 — DA, **New to Ireland**

14.010 *0274* *B. ulmella* Zell. — Trebullet RIS Site SX326780 (**2**) in 2013 (exact date unknown), male genitalia det. PRH — I.R.J. Tillotson *per* LACT

14.013 *0276* *B. demaryella* (Dup.) — Siccaridge Wood SO9303 (**33**) 19.vi.2013, male genitalia det. — GHJM *per* RH;Livox Wood ST540973 (**35**) 26.vi.2013, female genitalia det. — GMT; Allerthorpe Common SE7548 (**61**) vacated mines on *Betula* sp. 24.x.2013 — CHF

GRACILLARIIDAE

15.002 *0280* *Caloptilia cuculipennella* (Hübn.) — Marloes Cliffs SM784074 (**45**) vacated mines and spinnings on *Ligustrum vulgare* 13.x.2013 — R. Taylor *per* ADL; Gait Barrows SD4877 (**60**) 20.ix.2013, first documented VC record — MRY & SMP

15.003 *0281* *C. populetorum* (Zell.) — Frodsham SJ522777 (**58**) 30.iv.2013 — R. Bertera *per* SHH; Flixton SJ7493 (**59**) 3.v.2013 — K. McCabe per SMP

15.004 *0282* *C. elongella* (Linn.) — Marblehill Plantation M684042 (**H15**) mine on *Alnus glutinosa* 22.ix.2013 — KGMB

15.006 *0284* *C. rufipennella* (Hübn.) — Killavullen W648994 (**H5**) leaf-cones on *Acer pseudoplatanus* 3.viii.2013 — KGMB

15.010 *0288* *C. stigmatella* (Fabr.) — Bridge of Allan NS790974 (**86**) 30.iv.2013 — D. Bryant *per* JTK; Tattynure H438800 (**H36**) mines on *Salix* sp. 29.viii.2013 — KGMB

15.012 *0290* *C. semifascia* (Haw.) — Maes yr Haf, Newport SN05713896 (**45**) at MV light 1.iii.2013 — ADL; Middletown SJ305121 (**47**) vacated spinning on *Acer campestre* 19.viii.2013, det. PRW — D. Boyes *per* PRW; Rawmarsh SK4396 (**63**) larval cone on *Acer campestre* 31.viii.2013 — D. Shenton *per* HEB

15.013 *0291* *C. hemidactylella* ([D. & S.]) — Ipswich TM179455 (**25**) 23.vii.2013 — P. Kitchener per AWP

15.016 *0297* *Euspilapteryx auroguttella* Steph. — Tooreen North W618901 (**H5**) mines & leaf-cones on *Hypericum* sp. 26.vi.2014 — KGMB; Marblehill Plantation M684042 (**H15**) early-instar mine on *Hypericum tetrapterum* 22.ix.2013 — KGMB

15.018 *0292* *Povolnya leucapennella* (Steph.) — Llowes SO192420 (**43**) 3.vii.2013 — PJC & VFC

15.022 *0310* *Callisto denticulella* (Thunb.) — Peatlands Park, Co Armagh (**H37**) mine on *Malus* sp. 5.x.2012, det. B. Elliott — K. Murphy *per* JMcC

15.025 *0301* *Parornix betulae* (Staint.) — Glassoch Farm NX3369 (**74**) 27.viii.2013 det. KPB — P. Norman et al. *per* KAN; Ballintlea South R653130 (**H5**) mines & leaf-folds on *Betula pubescens* 14.ix.2013 — KGMB

15.026 *0302* *P. fagivora* (Frey) — North Ferriby TA0026 (**61**) larval folds on *Fagus sylvatica* 18.ix.2013 — I. Marshall *per* HEB

15.027 *0302a* *P. carpinella* (Frey) — Hoveton Hall TG3120 (**27**) damaged leaf-fold on *Carpinus betulus* 3.vii.2013 — S. Wright *per* JRW

15.028 *0303* *P. anglicella* (Staint.) — Kilmallock R607285 (**H8**) leaf-cones on *Crataegus monogyna* 22.ix.2013 — KGMB

15.030 *0305* *P. scoticella* (Staint.) — Whinlatter Forest NY2023 (70) mine on *Sorbus aucuparia* 17.ix.2013, moth emerged iv.2014, first VC record since VCH — RH *per* GH

15.033 *0309* *P. torquillella* (Zell.) — Bellaghy H926970 (**H40**) 11.vii.2013, genitalia det. KGMB — C. Bertrand *per* KGMB

15.036 *0317* *Phyllonorycter heegeriella* (Zell.) — Roundton Hill NR SO293946 (**47**) mines on *Quercus* sp. 23.ix.2013 — D.G. Green *per* PRW

15.040 *0321* *P. messaniella* (Zell.) — Gormonston College O164664 (**H22**) mines on *Fagus sylvatica* 12.xi.2013 — EO'D

15.043 *0323* *P. oxyacanthae* (Frey) — Kilmallock R607285 (**H8**) mines on *Crataegus monogyna* 22.ix.2013 — KGMB

15.044 *0324* *P. sorbi* (Frey) — Ballintlea South W650115 (**H5**) mines on *Sorbus aucuparia* 26.vii.2013 — KGMB

15.045 *0325* *P. mespilella* (Hübn.) — Upper Caldecote TL166457 (**30**) mines on cultivated *Pyrus* 24.ix.2013, det. DVM from pupal exuviae, — M. Burgess *per* DVM

15.046 *0326* *P. blancardella* (Fabr.) — Over Courance Lodge, Courance NY051908 (**72**) 13.viii.2013 — B. D. Henderson *per* KAN

15.048 *0328* *P. junoniella* (Zell.) — Agra Moor SE1382 (**65**) mines on *Vaccinium vitis-idaea* 25.v.2013 — CHF; Thrunton Wood NU0709 (**68**), four tenanted mines on *Vaccinium vitis-idaea* 1.xi.2013— A.J. Fairclough *per* TJT

15.049 *0329* *P. spinicolella* (Zell.) — Teeveeny R440160 (**H4**) tenanted & parasitised mines on *Prunus spinosa* 20.x.2013 – KGMB; Knoppoge Bridge W582962 (**H5**) tenanted mines on *Prunus spinosa* 26.x.2013 — KGMB

15.050 *0330* *P. cerasicolella* (H.-S.) — Middletown SJ305121 (**47**) vacated mine on *Prunus avium* 8.x.2013, det. PRW — D. Boyes *per* PRW

15.051 *0331* *P. lantanella* (Schrank) — Lynford TL8293 (**28**) mine on *Viburnum lantana* 21.ix.2013 — S. Wright *per* JRW; Tinwell TF011064 (**55**) mines on *Viburnum lantana* 27.ix.2013, moths bred — APR

15.053 *0332* *P. leucographella* (Zell.) — Millbeck NY256261 (**70**) mines on *Pyracantha* sp. 8.v.2013 — BPH *per* GH; St Andrews NO504162 (**85**) mine on *Crataegus monogyna* 20.ix.2013 — S. Millar *per* DWWD; Limerick City (Westfields) R557567 (**H9**) tenanted mine on *Pyracantha coccinea* 23.viii.2013 — KGMB; Gorteeny R758968 (**H15**) tenanted mines on *Pyracantha coccinea* 23.ix.2013 — KGMB; Tullamore N340245 (**H18**) tenanted mines on *Pyracantha coccinea* 11.xii.2013 — KGMB

15.056 *0335* *P. salicicolella* (Sircom) — Teeveeny R442162 (**H4**) tenanted mines, det. from pupae, on *Salix cinerea* 20.x.2013 — KGMB

15.057 *0336* *P. dubitella* (H. - S.) — Northampton SP7458 (**32**) mines on *Salix caprea* 30.x.2012, moth bred and genitalia det. DVM — M. Coles *per* DVM

15.065 *0343* *P. esperella* (Goeze) — Fishpond Plantation NZ5313 (**62**) mines on *Carpinus betulus* 17.x.2013 — CHF & R. Woods

15.066 *0344* *P. strigulatella* (L. & Z.) — Middletown SJ305121 (**47**) 22.viii.2013, genitalia det. ANG — D. Boyes *per* PRW

15.067 *0345* *P. rajella* (Linn.) — Lough Derg (Tievetooey) H086763 (**H34**) tenanted mine on *Alnus glutinosa* 16.vii.2013 — KGMB

15.069 *0347* *P. anderidae* (Fletcher) — Loch of Park NO7598 (**91**) mine on *Betula* sp. 1.x.2013, moth bred — MRY

15.071 *0349* *P. nigrescentella* (Logan) — Framlington Gate NU117036 (**68**) three tenanted mines on *Vicia sepium* 1.xi.2013— A.J. Fairclough *per* TJT

15.074 *0352* *P. schreberella* (Fabr.) — Middletown SJ305121 (**47**), vacated mine on *Ulmus glabra* 8.ix.2013, det. PRW — D. Boyes *per* PRW

15.075 *0353* *P. ulmifoliella* (Hübn.) — Gerah Bridge V875741 (**H1**) tenanted mines on *Betula pubescens* 29.vi.2013 — KGMB; Teeveeney R442162 (**H4**) vacated mine on *Betula pubescens* 11.viii.2013 — KGMB; Lough Derg (Tievetooey) H086763 (**H34**) tenanted mine on *Betula* sp.16.vii.2013 — KGMB

15.076 *0354* *P. emberizaepenella* (Bouché) — Ballintlea South R653127 (**H5**) mine on *Lonicera periclymenum* 14.ix.2013 — KGMB; Craigagh Wood D224322 (**H39**) mines on *Lonicera periclymenum* 24.ix.2013 — KGMB; Ness Wood C523112 (**H40**) mine on *Lonicera* (conf. from cocoon & mine form) 29.viii.2013 – KGMB

15.079 *0357* *P. stettinensis* (Nic.) — Meeth Quarry SS5308 (**4**) mines on *Alnus glutinosa* 10.viii.2013 — RJH

15.083 *0361* *P. trifasciella* (Haw.) — Ballintlea South R653127 (**H5**) mines on *Lonicera periclymenum* 14.ix.2013 – KGMB; Errigal Glen C813148 (**H40**) tenanted mines on *Lonicera* sp. 30.viii.2013 — KGMB

15.084 *0362* *P. acerifoliella* (Zell.) — Llawhaden SN 075171 (**45**) mine on *Acer campestre* 12.x.2013 — RT *per* ADL; Middletown SJ305121 (**47**), vacated mine on *Acer campestre* 20.x.2013, det. PRW — D. Boyes *per* PRW

15.085 *0363* *P. joannisi* (Le Marchand) (= *platanoidella* (Joannis)) — Hull University TA0731 (**61**) tenanted mines on *Acer platanoides* 9.x.2013 —A.D. Nunn *per* HEB; Swarland NU165035 (**68**) 21.viii.2013, conf. TJT — A.J. Fairclough *per* TJT

15.087 *0365* *P. comparella* (Duponchel, 1843) — Weeting TL7588 (**28**) 18.viii.2013 Mines — I. Barton & K. Rosewarne *per*JRW

15.089 *0366a* *Cameraria ohridella* Deschk. & Dim. — Laxey SC440843 (**71**) 26.viii.2013 — R. Cripps *per* ISS; UCD Belfield O178299 (**H21**) mines on *Aesculus hippocastanum* 8.vii.2013 J-R. Baars *per* EO'D, **New to Ireland**

15.092 *0368* *Phyllocnistis unipunctella* (Steph.) — Cockermouth NY1130 (**70**) vacated mine on *Populus* sp. 17.ix.2013 — R. Homan *per* GH

15.093 *0369* *P. xenia* (Hering) — Weymouth SY6880 (**9**) several vacated mines on *Populus alba* 15.x.2013 — J. Hunnisett *per* PHS; Gibraltar Point TF557583 (**54**) mines on *Populus alba* 27.viii.2013 — MJG; Easington TA3918 (**61**) tenanted mines on *Populus alba* 29.ix.2013 — A.D. Nunn *per* HEB

YPONOMEUTIDAE

16.001 *0424* *Yponomeuta evonymella* (Linn.) — South Uist NF791153 (**110**) 26.vii.2013, conf. MRY — JBK

16.002 *0425* *Y. padella* (Linn.) —Glen Nevis NN144685 (**97**) 9.viii.2013 — TP; Bearsden NS550733 (**99**) 1.viii.2013, det. MRY— R. Sutcliffe *per* JTK

16.004 *0427* *Y. cagnagella* (Hübn.) — Clarabad Farm NT925542 (**81**) 7.viii.2013, conf. MRY — BP; Ardentinny NS188873 (**98**) 12.viii.2013, conf. MRY — S.J. Petty *per* MRY

16.013 *0433* *Kessleria fasciapennella* (Staint.) — Glencoe NN118566 (**98**) in RIS trap i – v. 2013, genitalia prep. PRH & det. MFVC, first British record for 158 years — PRH, *Ent. Rec.* **125**: 238-239

16.015 *0437* *Swammerdamia caesiella* (Hübn.) — Clarkston NS591599 (**76**) 12.vii.2013, det. MRY — G Williamson *per* NG

16.017 *0438* *S. pyrella* (Villiers) — Middletown SJ305121 (**47**) 25.viii.2013, genitalia det. — D. Boyes *per* PRW

16.019 *0440* *Paraswammerdamia albicapitella* (Scharf.) — Middletown SJ305121 (**47**), 18.vii.2013, conf. PRW — D. Boyes *per* PRW

16.022 *0443* *Cedestis subfasciella* (Steph.) — Tramore S577013 (**H6**) 19.vii.2013 — TB

YPSOLOPHIDAE

17.002 *0452* *Ypsolopha nemorella* (Linn.) — Aberystwyth SN6283 (**46**) in RIS trap 2013, male genitalia det. — PRH; Laxey SC440843 (**71**) 3.viii.2013 — R. Cripps *per* ISS

17.003 *0453* *Y. dentella* (Fabr.) — Melvich NC881648 (**108**) 3.ix.2013 — GC

17.006 *0456* *Y. horridella* (Treits.) —Kineton SP37005204 (**38**) 20.viii.2013 — A. Prior *per* NJS

17.009 *0459* *Y. sylvella* (Linn.) — Costessey TG1810 (27) 30.ix.2013, first VC record since 19thC — M. Casey *per* JRW; Middletown SJ305121 (**47**) 7.x.2013, genitalia det. — D. Boyes *per* PRW

17.010 *0460* *Y. parenthesella* (Linn.) — Derryhoo H408187 (**H30**) 24.ix.2013, genitalia det. — KGMB

17.012 *0462* *Y. sequella* (Clerck) — Cilymaenllwyd, Pwll SN475017 (**44**) 4.x.2013 — I. Morgan *per* SDSB; Comrie NN752227 (**88**) 23.viii.2013 — R. Sutcliffe *per* JS; Quinish, Isle of Mull NM417528 (**103**) 19.ix.2013, conf. MRY — B. Prater *per* AS

PLUTELLIDAE

18.003 *0465* *Plutella porrectella* (Linn.) — Hill of Rattar ND244733 (**109**) 4.ix.2013 — NM; South Uist NF790283 (**110**) 24.ix.2013 — JBK

18.006 *0468* *Rhigognostis incarnatella* (Steudel) — Banc Y Mwldan SN1948 (**46**) 11 ix 2013, ♀ genitalia det. PRH — T. Allenby & I. Smith *per* PRH; Tynemouth NZ363704 (**67**) 17.vii.2013 — TJT, *Ent. Rec.* **124**: 179; Barcloy Hill NX8777 (**73**) 13.viii.2013 conf. KPB — R. Eagles et al. *per* KAN; Craignure, Isle of Mull NM715373 (**103**) 4.v.2013, conf. MRY — AS

GLYPHIPTERIGIDAE

19.001 *0470* *Orthotelia sparganella* (Thunb.) — Bridge of Allan NS799974 (**86**) 25.vii.2013 — D. Bryant *per* JTK

19.002 *0397* *Glyphipterix thrasonella* (Scop.) — Abbeyfeale (Townpark) R103255 (**H8**) 7.vi.2013 — KGMB; Corraquigley H014306 (**H30**) 18.vi.2013 — KGMB; Carntogher C809053 (**H40**) 12.vii.2013 — KGMB

19.005 *0395* *G. haworthana* (Steph.) — Longframlington Common NU105145 (**68**) two 4.vi.2013 — A.J. Fairclough *per* TJT; Eriskay NF7909 (**110**) 9.vi.2013 — JBK; Curraghavaddera R118806 (**H9**) 6.vi.2013 — KGMB

19.006 *0394* *G. forsterella* (Fabr.) — Flitwick Moor TL0435 (**30**) 22.vi.2013, det. A.M. Banthorpe — W. Powell *per* DVM; Creggan H622790 (**H36**) 20.vi.2013, male genitalia det. — KGMB

19.010 *0472* *Digitivalva pulicariae* (Klim.) — Laxey SC448083 (**71**) 13.viii.2013 — R. Cripps *per* ISS

19.014 *0476* *Acrolepia autumnitella* Curt. — Ellington Banks MOD SE2773 (**64**) 4.ix.2013, genitalia det. CHF — CHF, A. Wheeldon & W. Benson; Limerick R575565 (**H8**) vacated mines on *Solanum dulcamara* 23.viii.2013 — KGMB

ARGYRESTHIIDAE

20.005 *0409a* *Argyresthia trifasciata* Staud. — Freshwater SZ3386 (**10**) 16.vi.2013, det. T.J. Norriss — D. Cooke *per* MJW; Minnigaff NX4166 (**73**) 17.vi.2013 — G. Chambers *per* KAN; Stirling NS804887 (**86**) 27.vi.2013 — SMP & JRL

20.006 *0407* *A. dilectella* (Zeller) — Prestbury, Cheltenham SO9623 (**33**) 8.vii.2013 — K. Heron and J. Jones *per* RH

20.007 *0409b* *A. cupressella* Wals. — Shifnal SJ748071 (**40**) 12.vii.2013, conf. AGB — P.E. Watts *per* AGB; Hutton Conyers SE323733 (**65**) 2.vii.2013 — CHF

20.011 *0410* *A. brockeella* Tievetooey H086763 (**H34**) 16.vii.2013 — KGMB; Drumhonish H344728 (**H36**) 16.vii.2013 — KGMB

20.016 *0415* *A. retinella* Zell. — Breen Wood D119340 (**H39**) 15.vii.2013 — KGMB

20.017 *0416* *A. glaucinella* Zell. — Powkesmoor Coppice SO593893 (**40**) 8.vii.2013, conf. ANBS — AGB; Llandaff North, Cardiff ST154789 (**41**) 12.vii.2013 — GMT; Middletown SJ305121 (**47**) 20.vii.2013, genitalia det. ANG — D. Boyes *per* PRW

20.019 *0418* *A. conjugella* Zell. — Ness Wood (Oaks Wood) C501109 (**H40**) f. *maculosa* 19.vi.2013 — KGMB

20.020 *0419* *A. semifusca* (Haw.) — Tregaron SN6861 (**46**) in RIS trap vii 2013 — PRH; Boat of Garten NH940184 (**95**) 14.viii.2013, conf. MRY — MT

20.021 *0420* *A. pruniella* (Cl.) — Castle Loch, Mochrum NX294539 (**74**) 9.viii.2013, det. KPB — R. & B. Mearns *per* KAN

20.023 *0422* *A. albistria* (Haw.) — Cairn Head NX486383 (**74**) 10.viii.2013, det. KPB — R. & B. Mearns *per* KAN

20.024 *0423* *A. semitestacella* (Curt.) — Glasbury SO180390 (**43**) 12.ix.2013, female genitalia det. PJC — PJC & VFC; Skatie Shore NO8988 (**91**) 12.viii.2013 — MRY; Findhorn Dunes NJ054640 (**95**) 1.viii.2013, conf. JRL from photograph — G. Hunter *per* MT; Kildary NH7775 (**106**) 19.viii.2013, conf. MRY — N. Richards *per* MRY

LYONETIIDAE

21.002 *0262* *Lyonetia prunifoliella* (Hübn.) — Icklesham TQ885159 (**14**) at MV light 5.viii.2013, det. AMD — I.D. Hunter *per* CRP

21.004 *0254* *Leucoptera laburnella* (Staint.) — Kilmallock R607285 (**H8**) mine on *Laburnum anagyroides* 22.ix.2013 — KGMB; Park C587022 (**H40**) mine on *Laburnum anagyroides* 20.vi.2013 — KGMB

PRAYDIDAE

22.002 *0449* *Prays fraxinella* (Bjerk.) — Banagher Glen NR (Strone Hill) C668046 (**H40**) 11.vii.2013 — KGMB

22.003 *0448a* *P. ruficeps* (Hein.) — Westcott SP7117 (**24**) 10.viii.2013 — D.L. Wilton *per* MVA

SCYTHROPIIDAE

25.001 *0450* *Scythropia crataegella* (Linn.) — Middletown SJ305121 (**47**) 2.vii.2013, conf. PRW — D. Boyes *per* PRW

DOUGLASIIDAE

26.001 *0398* *Tinagma ocnerostomella* (Staint.) — Aldeby TM4393 (**27**) larval feeding signs in stems of *Echium vulgare* 11.vi.2013 — AWP *per* JRW

AUTOSTICHIDAE

27.001 *0870* *Oegoconia quadripuncta* (Haw.) — Middletown SJ305121 (**47**) 23.vii.2013, genitalia det. ANG — D. Boyes *per* PRW

OECOPHORIDAE

28.008 *0642a* *Metalampra italica* Baldizzone — Spearywell SU3127 (**11**) 10.viii.2013, det. MJW — J.A. Groves *per* MJW; Oxford SP527054 (**23**) 15.vii.2013 — B. Sheldon *per* MFVC; Marbury Country Park, Northwich SJ653764 (**58**) 16.viii.2013 — B. Carthy *per* SHH

28.019 *0649* *Esperia sulphurella* (Fabr.) — Findhorn NJ0464 (**95**) two pupae under bark of *Cytisus scoparius* 13.v.2013, moths bred — SDB & RJH

28.023 *0652a* *Harpella forficella* (Scop.) — Holborough Marshes NR (**16**) 13.vii.2013 — R. Newham *per* DJLA

28.024 *0656* *Tachystola acroxantha* (Meyr.) — Black Rock, Portskewett ST512880 (**35**) 22.viii.2013 — R Clarke & K Dupe *per* SDSB; St Clears SN21 (**44**) viii.2013 — R. Lawrence *per* SDSB; Aberporth SN2551 (**46**) 11.xi.2013 — S. Bebb *per* PRH; Leeds SE3037 (**64**) 29.viii.2013 — R. Simpson *per* HEB

28.025 *0654* *Pleurota bicostella* (Clerck) — Bal Bach SO273267 (**35**) 30.vi.2013 — D Grundy *per* SDSB

CHIMABACHIDAE

29.002 *0664* *Diurnea lipsiella* ([D. & S.]) — Kildary NH7775 (**106**) 27.x.2013, conf. MRY — N. Richards *per* MRY

LYPUSIDAE

30.003 *0660* *Pseudatemelia josephinae* (Toll) — Aberystwyth SN6283 (**46**) in RIS trap 2013, male genitalia det. — PRH; New Marske NZ6220 (**62**) 26.vii.2013, genitalia det. HEB — D. Money *per* HEB

DEPRESSARIIDAE

32.003 *0668* *Luquetia lobella* ([D. & S.]) — Owston SE5511 (**63**) 4 & 11.vii.2013 — M. Prior *per* HEB

32.009 *0691* *Agonopterix purpurea* (Haw.) — Llanymynech Rocks NR SJ267219 (**47**) 20.v.2013, det. D.A. Grundy — M.D. Bellingham *per* PRW

32.012 *0703* *A. atomella* ([D. & S.]) — Arcot Pond NZ251751 (**67**) two 20.viii.2013 — TJT

32.016 *0696* *A. propinquella* (Treits.) — Barcloy Hill NX8764 (**73**) 13.viii.2013, det. KPB — R. Eagles et al. *per* KAN

32.026 *0698* *A. kaekeritziana* (Linn.) — Stein Head, Isle of Whithorn NX486372 (**74**) 10.viii.2013, det. KPB — R. & B. Mearns *per* KAN; Dunnet Dunes ND219699 (**109**) 20.viii.2013 — NM

32.032 *0713* *A. angelicella* (Hübn.) — North Uist NF817596 (**110**) 4.viii.2013, conf. MRY — S.E. Duffield *per* JBK; Tramore S577013 (**H6**) 21.vii.2013 — TB

32.038 *0674* *Depressaria badiella* (Hübn.) — Warndon, Worcester SO883570 (**37**) 26.ix.2013, genitalia det. — S. Whitehouse *per* ANBS; Teesmouth NZ5125 (66) 1.viii.2013, male genitalia det., first VC record since at least 1885 — R. Woods *per* TJB

32.044 0677 *D. douglasella* Staint. — Lakenheath TL726825 (**26**) adult at light 30.viii.2013 — Suffolk Moth Group per AWP; Brockadale NR SE5017 (**63**) 3.vii.2013 — D. Williamson *per* HEB

32.050 *0646* *Telechrysis tripuncta* (Haw.) — Wolvercote SP490099 (**23**) 18.vii.2013 — S. Goddard *per* MFVC

ETHMIIDAE

33.002 *0719* *Ethmia quadrillella* (Goeze) — Long Ditton TQ1666 (**17**) 21.viii.2013, conf. JP — B.R. Dykes *per* JP; Whaley Bridge SK008806 (**58**) 9.vi.2013 — A. Seymour *per* SHH

33.004 *0717* *E. terminella* Fletch. — Shoreham beach TQ2305 (**13**) 20.vi.2013, — THF

COSMOPTERIGIDAE

34.002 *0900* *Pancalia schwarzella* (Fabr.) — Bishops Itchington, Bishops Hill SP39335847 (**38**) 2.vi.2013, male genitalia det. — M. Kennard *per* NJS

34.009 *0896b* *Cosmopterix pulchrimella* Chambers — Port Eynon SS467853 (**41**) tenanted mines on *Parietaria judaica* 15.ix.2013, moths bred — GMT

34.0111 *0897a* *Anatrachyntis badia* (Hodges) — Southsea SZ655987 (**11**) at MV light 22.vii.2013 — JRL

34.014 *0910* *Sorhagenia janiszewskae* Riedl — Bushy Park TQ1570 (**21**) 9.viii.2013, male genitalia det. — THF; Whixall Moss SJ490357 (**40**) 21.viii.2013, female genitalia det. ANG — D.G. Grundy *per* AGB

GELECHIIDAE

35.002 *0849* *Syncopacma cinctella* (Clerck) — Chalford SO8902 (**33**) 29.vi.2013, genitalia det. RH — B Smith *per* RH; Lisburn J257656 (**H39**) 7.vii.2013, genitalia det. JMcC — E. Rolston *per* JMcC

35.003 *0844* *S. larseniella* (Gozm.) — Cheltenham SO9519 (**33**) 13.vii.2013, male genitalia det. — GHJM; Middletown SJ305121 (**47**) 21.vii.2013, genitalia det. ANG — D. Boyes *per* PRW; nr Willington, Derby SK287303 (**57**) 20.vii.2013, genitalia det. — DB

35.004 *0847* *S. taeniolella* (Zell.) — Brockadale NR SE5017 (**63**) 6.vii.2013, genitalia det. HEB — D. Williamson *per* HEB

35.006 *0846* *S. vinella* (Bankes) — Isle of Wight (**10**) larvae in spun leaves of *Genista tinctoria* 21 & 23.vi.2013, moths bred, genitalia det. RJH, previously only known from four or five localities in Sussex, not seen at its last known locality there since 1990 and until now believed to be extinct in the British Isles — SDB & RJH

35.010 *0843* *Aproaerema anthyllidella* (Hübn.) — Umbra C728360 (**H40**) mine on *Anthyllis vulneraria* 19.vi.2013 — KGMB

35.012 *0854* *Anacampsis blattariella* (Hübn.) — Roudsea Wood NNR SD3382 (**69**) 10.viii.2012, male genitalia det. SMP — D. Green & G. Jones *per* SMP

35.018 *0858* *Hypatima rhomboidella* (Linn.) — Rossie Moor NO651536 (**90**) 20.viii.2013, conf. MRY — P. Brooks *per* MRY

35.019 *0857* *Anarsia lineatella* Zell. — Bawdsey TM332381 (**25**) 26.vii.2013 — MJD, J.E. Chainey & J. Spence

35.0299 *Helcystogramma triannulella* (H.-S.) — Peacehaven Watermill, St Marys, Isles of Scilly SV922122 (**1**) 3.x.2013, female genitalia det. M.R. Honey — C. Lewis *per* SMP, **New to the British Isles**

35.034 *0749* *Sitotroga cerealella* (Ol.) — Bovey Tracey SX811787 (**3**) one live adult found in a bag of Camargue red rice 17.viii.2013, subsequently 65 dead moths and five larvae were found in the same bag, origin unknown, genitalia det. RJH — J. Barker *per* RJH

35.036 *0747* *Chrysoesthia sexguttella* (Thunb.) — Walter's Ash SU9397 (**24**) vacated mines on *Chenopodium album* 20.vii.2013, — N. Fletcher *per* MVA; Briton Ferry Dock viaduct SS737940 (**41**) tenanted mines on *Atriplex prostrata* 30.viii.2013, — B. Stewart *per* DJS; Cushendun D251335 (**H39**) mines on *Atriplex* sp. 14.vii.2013 — KGMB

35.045 *0777* *Bryotropha. basaltinella* (Zell.) — Southsea SZ655987 (**11**) 15.viii.2013, conf RJH from photograph — JRL; Sharnbrook SP9959 (**30**) 23.vii.2013, male genitalia det. — DVM

35.049 *0780* *B. similis* (Staint.) — Creggan H624789 (**H36**) 16.vii.2013, genitalia det. O Karsholt — KGMB

35.058 *0726* *Metzneria metzneriella* (Staint.) — RMB Chivenor SS488347 (**4**) 18.vi.2013 — R. Wolton *per* RJH

35.060 *0730* *Apodia bifractella* (Dup.) — Steps Hill SP9516 (**24**) 22.vii.2013, male genitalia det. — PRH *per* MVA

35.064 *0734* *Argolamprotes micella* ([D. & S.]) — Gare Hill ST783404 (**8**) 20.vii.2013 — EGS & MHS, *Ent. Rec.***125**: 243; St Anthonys, Llansteffan SN346099 (**44**) 20.vii.2013, conf. SDSB from photograph — M. Jones *per* SDSB;Maes yr Haf, Newport SN05713896 (**45**) 21.vii.2013 — ADL

35.065 *0728* *Monochroa cytisella* (Curt.) — Pickworth Great Wood SK985148 (**55**) 20.vii.2013— M.P. Skevington *per* APR

35.066 *0735* *M. tenebrella* (Hübn.) — Roundton Hill SO293946 (**47**) 26.vi.2013 — ANG & JEG *per* PRW; Simonside NZ052987 (**67**) four 16.vii.2013 — A.J. Fairclough *per* TJT; Port Vasigo NC5864 (**108**) 8.vii.2013, female genitalia det. SMP — K. McCabe *per* GC

35.068 *0738* *M. tetragonella* (Staint.) — Newborough Warren Saltings SH4262 (**52**) many larvae in stems and roots of *Glaux maritima* 4.vi.2013 — PHS & BPH

35.071 *0736* *M. lucidella* (Steph.) — Swarland NU165035 (**68**) 14.viii.2013, conf. TJT — A.J. Fairclough *per* TJT

35.076 *0741* *M. suffusella* (Dougl.) — Peatlands Park (**H37**) 11.vii.2013, genitalia det. KGMB — K. Murphy *per* JMcC

35.079 *0733* *Eulamprotes wilkella* (Linn.) — Stretham TL5174 (**29**) 17.vii.2013 — I. Barton & K. Rosewarne *per* SMP

35.087 *0798* *Neofriseria peliella* (Treits.) — Kempton NR TQ116706 (**21**) 11.vii.2013, male genitalia det. K. Sattler — P.R. Wheeler *per* SMP

35.092 *0793* *Mirificarma lentiginosella* (Zell.) — Arcot Pond NZ251751 (**67**) four 19.viii.2013, genitalia det. SMP — TJT

35.095 *0791* *Chionodes distinctella* (Zell.) — Findhorn NJ049645 (95) larvae in sand-covered silken tubes attached to *Syntrichia ruralis* ssp. *ruraliformis* but feeding on leaves of *Lotus corniculatus*, 12.v.2013, moths bred, genitalia det. RJH, larva previously unknown in the British Isles and *Lotus corniculatus* is not one of the foodplants given in mainland European literature — SDB & RJH

35.096 *0790* *C. fumatella* (Dougl.) — Seal Sands, Teesmouth NZ5225 (66) 30.vii.2013, male genitalia det., first VC record since at least 1912 — R. Woods *per* TJB; Inverness NH675444 (**96**) 10.vii.2013, genitalia det. MRY — E. Munro *per* MT

35.099 *0801a* *Gelechia senticetella* (Staud.) — Whetstone SP555958 (**55**) 8.viii.2013 — M.P. Skevington *per* APR

35.101 *0802a* *G. sororculella* (Hübn.) — Craigellachie NNR, Aviemore NH889125 (**95**) 1.viii.2013, conf. MRY — T. Prescott *per* MT

35.110 *0814a* *Scrobipalpa pauperella* (Hein.) – Ellington Banks MOD SE2773 (**64**) 25.v.2011, genitalia det. CHF, conf. HEB — CHF, *Ent. Rec.* **126**: 69-70

35.114 *0812* *S. instabilella* (Dougl.) — Murlough NR (**H38**) 11.viii.2013, genitalia det. JMcC — A. Crory *per* JMcC

35.115 *0815* *S. nitentella* (Fuchs) — Holy Island, The Snook NU104434 (**68**) 2.viii.2013, three males genitalia det. — TJT

35.116 *0816* *S. obsoletella* (F. v. R.) — Newton Pool NU243243 (**68**) 24.vii.2013, genitalia det. K.W. Regan — I Fisher *per* TJT

35.117 *0818* *S. atriplicella* (F. v. R.) — Bracklesham SZ8097 (**13**) 17.v.2013, male genitalia det. SMP — D.F.J. Lee *per* SMP

35.119 *0811* *S. samadensis* (Pfaff.) — Teesmouth NZ5124 (66) 21.viii.2013, female genitalia det., first VC record since at least 1912 — R. Woods *per* TJB

35.122 *0817* *S. clintoni* Povolný — First Coast, Wester Ross NG921910 (105) several pupae in dead stems of *Rumex obtusifolius* 7.v.2013, moths bred. Previously unrecorded foodplant — SDB & RJH, *Ent. Gaz.* **65**: 1–2

35.123 *0819* *S. costella* (H. & W.) — Bridge of Allan NS799974 (**86**) 23.x.2013 — D. Bryant *per* JTK

35.127 *0825a* *Tuta absoluta* (Meyr.) — Bawdsey Hall TM 347394 (**25**) 5.x.2013, male genitalia det. R.A. Watson — MJD; Coventry, Keresley SP31548525 (**38**) 18.viii.2013, male genitalia det. — NJS

35.129 *0828* *Caryocolum viscariella* (Staint.) — Edge Hills SO6615 (**34**) 19.vii.2013 — M.J. Bradley *per* GHJM; Hayscastle SM 915254 (**45**) 28.viii.2013, first documented VC record, male genitalia det. — RT *per* ADL; Dunskey Glen, Portpatrick NW9955 (**74**) 2.viii.2012, male genitalia det. SMP — A. Barker *per* KAN

35.130 *0826* *C. vicinella* (Dougl.) — Balmamacqueen NG444742 (**104**) 22.viii.2013, genitalia det. J. Clifton — N. Montegriffo *per* BN

35.133 *0832* *C. blandella* (Dougl.) — Salem SN608280 (**44**) 16.viii.2013 — V. Matthews *per* SDSB; Castle Wood, Caerlaverock NY019652 (**72**) 1.viii.2013 — A. Robertson *per* KAN; Chippermore Port, Luce Bay NX289480 (**74**) 9. viii.2013, det. KPB — R. & B. Mearns *per* KAN

35.134 *0832a* *C. blandelloides* (Karsholt) — Nairn East dunes NH8957 & 9057 (**96**) larvae in seed-capsules of *Cerastium fontanum*, moths bred — MRY, SMP & JRL

35.138 *0833* *C. junctella* (Dougl.) — Kildary NH7775 (**106**) 6.ix.2013, conf. MRY — N. Richards *per* MRY

35.140 *0836* *C. kroesmanniella* (H. – S.) — Tyne tunnel conservation area NZ329666 (**67**) 21.viii.2013, female genitalia det. SMP — TJT

35.142 *0769* *Teleiodes wagae* (Nowicki) — Grovely Wood SU00134 (**8**) 21.vi.20013, genitalia det. — EGS & MHS

35.143 *0774* *T. luculella* (Hübn.) — Shanklin SZ5781 (10) 20.vii.2013, det. MJW, first VC record for over 100 years — I. Outlaw *per* MJW

35.146 *0776* *Teleiopsis diffinis* (Haw.) — Minna M034222 (**H16**) 9.vii.2013 — KGMB

35.147 *0767* *Carpatolechia decorella* (Haw.) — Charlton Kings, Cheltenham SO9721 (**33**) 1.vii.2013, female genitalia det. RH — R. Ward *per* RH

35.148 *0772* *C. fugitivella* (Zell.) — Oldmeldrum NJ8227 (**93**) 16.vii.2013 — MRY

35.157 *0758* *Recurvaria leucatella* (Clerck) — nr Willington, Derby SK287303 (**57**) 20.vii.2013 — DB

35.161 *0756* *Parachronistis albiceps* (Zell.) — Shanklin SZ5781 (**10**) 13.vii.2013, conf. MJW — I. Outlaw *per* MJW

BATRACHEDRIDAE

36.001 *0878* *Batrachedra praeangusta* (Haw.) — Swarland NU165035 (**68**) 2.viii.2013 — A.J. Fairclough *per* TJT; Grantshouse Quarry NT810652 (**81**) 6.viii.2013, conf. MRY — BP

36.002 *0879* *B. pinicolella* (Zell.) — Freshwater SZ3386 (**10**) 13.vii.2013, conf. MJW — D. Cooke *per* MJW; Bawdeswell TG0420 (27) 22.vii.2013, first VC record since 19th C — D. Appleton *per* JRW; Formby SD2707 (**59**) 17.vi.2013 genitalia det. SMP — R. Walker *per* SMP

COLEOPHORIDAE

37.009 *0496* *Coleophora milvipennis* (Zell.) — Sapcote SP493939 (**55**) 20.vii.2013, genitalia det. A.J. Mackay — G.E. Calow *per* APR

37.012 *0499* *C. limosipennella* (Dup.) — Lincoln SK957725 (**54**) case on *Ulmus* sp. 9.xi.2013 — MJG

37.017 *0494a* *C. prunifoliae* Doets — Niton SZ504754 (**10**) cases on *Prunus spinosa* 6.vi.2013, moths bred and female genitalia det. SMP — SMP & JRL

37.022 *0504* *C. lusciniaepennella* (Treits.) — Tattynure H438800 (**H36**) vacated mines & larval case on *Myrica gale* 29.viii.2013 — KGMB

37.028 *0510* *C. juncicolella* Staint. — Sutton Park - Banners Gate SP09159579 (**38**) cases swept 4.v.2013 — M. Kennard *per* NJS; Grinton Moor SE0595 (**65**) larval cases swept from heather 16.v.2013 — CHF; South Uist NF8016 (**110**) 18.vii.2013, genitalia prep. JBK, det. JRL — JBK; Straduff Bog H342668 (**H36**) 26.vi.2013, det. B. Elliott — K. Murphy *per* JMcC

37.030 *0512* *C. binderella* (Koll.) — Straduff (**H36**) 26.vi.2013, genitalia det. J. Clifton — K. Murphy *per* JMcC, *Ent. Rec.* **126**: 67

37.031 *0514* *C. ahenella* Hein. — Cooloorta Turlough R3496 (**H9**), many cases on *Rhamnus cathartica* 12.vi.2012, adults emerged May 2013, genitalia det., **New to Ireland** — PHS & BPH

37.033 *0516* *C. trifolii* (Curt.) — Staveley NR SE3663 (**64**) 13.vii.2013 — T.A. Box *per* HEB

37.036 *0521* *C. conyzae* (Zell.) — Kelmarsh Hall & gardens SP7379 (**32**) 17.vii.2013, male genitalia det. H. van der Wolf — J. Skinner *per* DVM

37.042 *0545* *C. saturatella* Staint. — Mancetter, Purley Quarry SP30479636 & SP30549639 (**38**) 8.viii.2013 two females genitalia det. — M. Kennard & C.D. Johnson *per* NJS

37.046 *0519* *C. deauratella* L. & Z. — Brockadale NR SE5017 (**63**) 6.vii.2013, genitalia det. HEB — D. Williamson *per* HEB

37.047 *0520* *C. amethystinella* Ragonot (= *fuscicornis* auctt.) — Fivehead Arable Fields NR ST338225 (**5**) 25.vi.2013 — ME & R. Edmondson; Irchester Country Park SP9166 (**32**) 26.vii.2013, genitalia det. DVM — J. Skinner *per* DVM

37.052 *0535* *C. ibipennella* Zell — Hutton Conyers SE323733 (**65**) 18.vii.2013, genitalia det. — CHF

37.055 *0541* *C. pyrrhulipennella* Zell. — Carroglen Burn NN769265 (**88**) 27.vi.2013 — N. Cooke *per* JS; Rossie Moor NO651536 (**90**) 17.v.2013, det. MRY — P. Brooks *per* MRY; Garry Wood C950307 (**H39**) 11.vii.2013, genitalia det. — KGMB

37.063 *0544* *C. albicosta* (Haw.) — Creggan H624789 (**H36**) 16.vii.2013 — KGMB

37.066 *0526* *C. laricella* (Hübn.) — Dundonnell firwood NH109883 (**105**) case on *Larix decidua* 29.vi.2013 — SEM

37.068 *0586* *C. adjunctella* Hodgk. — Teesmouth NZ5124 (**66**) 3.vii.2013, female genitalia det. HEB — R. Woods *per* TJB; Birling Links saltmarsh, Warkworth NU262054 (**68**) six cases on *Juncus gerardii* 29.viii.2013 — A.J. Fairclough *per* TJT

37.070 *0583* *C. tamesis* Waters — Brodick NS0138 (**100**) in RIS trap 2013, male genitalia det. — PRH

37.071 *0582* *C. glaucicolella* Wood — Creggan H624789 (**H36**) 16.vii.2013 genitalia det. — KGMB

37.073 *0584* *C. alticolella* Zell. — Creggan H622790 (**H36**) 20.vi.2013 genitalia det. — KGMB

37.074 *0581* *C. taeniipennella* H.-S. — Aston Locks SJ335264 (**40**) cases on *Juncus articulatus* 28.ix.2013, conf. ANBS — D. Knight *per* AGB;Framlington Gate NU117036 (**68**) 15 cases on *Juncus articulatus* 1.xi.2013 — A.J. Fairclough *per* TJT

37.078 *0585* *C. maritimella* Newman — Birling Links saltmarsh, Warkworth NU262054 (**68**) 25 cases on *Juncus maritimus* 29.viii.2013 — A.J. Fairclough *per* TJT

37.079 *0574a* *C. aestuariella* Bradley — Bawdsey Quay TM3338 (**25**) cases on *Suaeda maritima* 3.ix.2013 — JRL & B.Elliott

37.081 *0561* *C. therinella* Tengst. — Wolvey, Abbey Farm SP43658964 (**38**) 12.vii.2013, male genitalia det. — A. Ryder & A. Prior *per* NJS

37.085 *0569* *C. squamosella* Staint. — Old Weston TL099774 (**31**) 1.viii.2013, genitalia det. — K. Royles *per* BD

37.088 *0573* *C. atriplicis* Meyr. — Gann saltmarsh, nr Dale SM813072 (**45**) cases on *Salicornia* sp. and *Atriplex portulacoides* 22.x.2013 — RT

37.090 *0577* *C. artemisicolella* (Scott) — Saxilby Flood SK894748 (**53**) cases on *Artemisia vulgaris* 18.ix.2013 — MJG; Lynemouth Power Station NZ302913 (**67**) two cases on *Artemisia vulgaris* 24.ix.2013 — A.J. Fairclough *per* TJT

37.097 *0556a* *C. linosyridella* Fuchs — Berry Head area, Brixham (**3**) several cases on *Aster linosyris*, three retained, moths bred, genitalia det.; same locality 29.vi.2013 several moths disturbed from foodplant by using bee-smoker, one retained; same locality 28.viii.2013 one female, wingspan only 9 mm, genitalia det. RJH. The first British record outside Kent and Essex and a previously unrecorded British foodplant — SDB & RJH, *Ent. Rec.* **125**: 244–248

37.098 *0554* *C. inulae* Wocke — Warsop Main Pit Top SK5512368203 (**56**) cases on *Pulicaria dysenterica* 22.ix.2013 — T&DP

37.099 *0553* *C. striatipennella* Nyl. — Teesmouth NZ5124 (66) 11.vi.2013, male genitalia det., first VC record since at least 1886 — R. Woods *per* TJB

37.102 *0563* *C. argentula* (Steph.) — Lower Snead SO308927 (**47**) many cases on seedheads of *Achillea millefolium* 2.xi.2013 — D.G. Green *per* PRW

37.105 *0550* *C. nutantella* Mühlig & Frey (= *silenella* auctt.) — Totternhoe Quarry SP9822 (**30**) 6.vii.2013, genitalia det. DVM — A.M. & M.G. Banthorpe *per* DVM

37.106 *0560* *C. paripennella* Zell. — Ballyscanlan S541028 (**H6**) case on *Centaurea nigra* 29.viii.2013, conf. JRL from photograph — TB

37.107 *0589* *C. clypeiferella* Hofm. — Icklesham TQ885159 (**14**) at MV light 5.viii.2013, genitalia det. AMD — I.D. Hunter *per* CRP; Devil's Spittleful SO807748 (**37**) 7.viii.2013, male genitalia det. — P. Clements *per* ANBS

ELACHISTIDAE

38.004 *0610* *Elachista argentella* (Clerck) — Oldshoremore NC2058 (**108**) 20.vii.2013 — SDB & RJH; Corraquigley H014306 (**H30**) 18.vi.2013 — KGMB; Myroe Level C625280 (**H40**) 19.vi.2013 — KGMB

38.005 *0611* *E. triatomea* (Haw.) — River Nanny O155711 (**H22**) 13.vii.2013 — EO'D

38.015 *0620* *E. gangabella* (Zell.) — Middletown SJ305121 (**47**) 25.vii.2013, conf. PRW — D. Boyes, *per* PRW

38.016 *0621* *E. subalbidella* Schl. — Ballyscanlan S541028 (**H6**) 17.vi.2013 — TB; Aghaboy H557814 (**H36**) 20.vi.2013 — KGMB

38.022 *0594* *E. gleichenella* (Fabr.) — Myer's Allotment, Silverdale SD4774 (**60**) 21.vi.2013, first documented record, det. SMP — T. Hutchinson *per* SMP

38.026 *0598* *E. kilmunella* (Staint.) — Berwyns SH966277 (**47**) 20. vii.2013 —ANG & JEG *per* PRW; The Merrick NX419850 (**73**) 7.viii.2013, det. KPB — R. Mearns *per* KAN; Coolavehy R682152 (**H8**) 29.v.2013 — KGMB

38.029 *0600* *E. luticomella* Zell. — Nosterfield NR SE2779 (**65**) 5.vii.2013, genitalia det. HEB — CHF, HEB *et al.*

38.032 *0602* *E. apicipunctella* Staint. — Changue Port, Luce Bay NX297475 (**74**) 9.viii.2013, det. KPB — R. & B. Mearns *per* KAN

38.034 *0604* *E. orstadii* Palm — Brassey NR SP1322 (**33**) 19.v.2012, 17.v.2013 & 27.v.2013, males genitalia det., also 3 other VC 33 sites in 2013 — GHJM, **New to England**, Ent. Rec. **125**: 231-235

38.036 *0606* *E. humilis* Zell. —Tongue to Castle Varrich NC5856 (**108**) 11.vii.2013, male and female genitalia det. SMP — K. McCabe *per* GC

38.039 *0609* *E. maculicerusella* Bruand — Cors Dyfi NR SN705987 (**47**) 3.viii.2013, conf. PRW — M. Wagland, *per* PRW; Tywyn (south of) SN595979 (**48**) at rest on leaf of *Phalaris arundinacea* 3.viii.2013 — ANG & JEG

38.043 *0627* *E. scirpi* (Staint.) — Sand Bay ST330655 (**6**) 19.vii.2013 — PAB; Ninch O155 711 (**H22**) 26.vi.2013 — EO'D

38.044 *0628* *E. eleochariella* (Staint.) — Lytham St Anne's SD3130 (**60**) 25.vi.2013, male genitalia det. SMP — SMP & JRL

38.045 *0629* *E. utonella* (Frey) — Whetstone SP555958 (**55**) 22.vii.2013, genitalia det. J. Clifton — M.P. Skevington *per* APR; Holy Island, The Snook NU104434 (**68**) 2.viii.2013, male genitalia det. — TJT

38.046 *0630* *E. albidella* (Nyl.) — Glasbury SO180390 (**43**) 24.vii.2013, male genitalia det. PJC — PJC & VFC; Creggan H622790 (**H36**) 20.vi.2013 genitalia det. — KGMB

38.047 *0631* *E. freyerella* (Hübn.) — Connansknowe, Kirkton NX972821 (**72**) 31.vii.2013, det. KPB — R. & B. Mearns *per* KAN

38.048 *0632* *E. consortella* (Staint.) — Llanymynech Rocks NR SJ267219 (**47**) 20.v.2013, genitalia det. — M.J. Dale *per* PRW

PARAMETRIOTIDAE

39.002 *0906* *Blastodacna atra* (Haw.) — Trebullett SX326780 (**2**) in RIS trap 2013 (exact date unknown), male genitalia det. PRH — I.R.J. Tillotson *per* LACT; Tregaron SN6861 (**46**) in RIS trap vii 2013, male genitalia det. — PRH; Swarland NU165035 (**68**) 12.vii.2013, conf. TJT — A.J. Fairclough *per* TJT

MOMPHIDAE

40.001 *0885* *Mompha conturbatella* (Hübn.) — Cnwc y Llwyn SN515311 (**44**) 18.vii.2013 — SDSB

40.003 *0887* *M. lacteella* (Steph.) — John O'Groats ND385726 (**109**) 15.viii.2013, det. MRY — NM

40.004 *0888* *M. propinquella* (Staint.) — Foxglove Covert, Catterick SE1697 (**65**) 19.vii.2013 — CHF, J. Warwick & A. Wheeldon; Murlough Bay D190423 (**H39**) 15.vii.2013 — KGMB

40.006 *0890* *M. jurassicella* (Frey) — Swindon Lane, Cheltenham SO9424 (**33**) 9.ii.2013, genitalia det. RH, found indoors — RH; Boothferry SE7326 (**61**) larvae in stems of *Epilobium hirsutum* 14.ix.2013 — S.R. Sowden *per* HEB; Carlton, Selby SE6423 (**64**) pupa in stem of *Epilobium hirsutum* 8.x.2013 — S.R. Sowden *per* HEB

40.011 *0880* *M. langiella* (Hübn.) — Burnham Beeches NNR SU9484 (**24**) mines on *Circaea lutetiana* 8.vii.2013— MVA; Springmartin, Belfast J308744 (**H39**) 31.viii.2013, det. KGMB — S. Millar *per* JMcC

40.012 *0884* *M. miscella* ([D. & S.]) — Crookacre Wood SD9771 (**64**) 22.vii.2013, genitalia det. CHF — P. Millard *per* HEB

40.013 *0882* *M. locupletella* ([D. & S.]) — Tylcau RWT Reserve, Llanbister SO1376 (**43**) 26.vi.2013 — PJC & VFC; Howick NU258178 (**68**) 29.vii.2013, conf. TJT — S. Sexton *per* TJT; Ballyscanlan S548029 (**H6**) 24.vi.2013 — TB; Donsallagh East R114767 (**H9**) 5.vi.2013 — KGMB

40.014 *0881* *M. terminella* (H. & W.) — Groton Wood TL942 (**26**) mines on *Circaea lutetiana* — Suffolk Moth Group *per* AWP

40.015 *0883* *M. raschkiella* (Zell.) — Carrigdarrery W383672 (**H3**) 15.viii.2013, genitalia det. — KGMB

BLASTOBASIDAE

41.002 *0873* *Blastobasis adustella* Wals. — Gortin Glen H495840 (**H36**) 29.viii.2013 — KGMB

41.003 *0874* *B. lacticolella* Rebel — Roybridge NN277811 (**97**) 18.vi.2013 — P. Brooks *per* MRY; Carrowmenagh C837039 (**H40**) 13.vii.2013 — C. Bertrand *per* KGMB

41.0041 *B. maroccanella* Amsel — Southsea SZ6598 (**11**) 25.vii & 11.xi.2013, both male genitalia det. JRL, conf. MFVC — JRL, **New to the British Isles**, *Ent. Rec.* **126**: 85-91.

SCYTHRIDIDAE

43.004 *0915* *Scythris picaepennis* (Haw.) — Cranwich Heath TL7693 (**28**) 18.vi.2013 — I. Barton & K. Rosewarne *per* JRW; Findhorn NJ0464 (**95**) larvae on *Lotus corniculatus* 12.v.2013, moths bred — SDB & RJH

ALUCITIDAE

44.001 *1288* *Alucita hexadactyla* Linn. — Tillycoutry NS913970 (**87**) 20.v.2013 — G. Edwards *per* JTK

PTEROPHORIDAE

45.004 *1501* *Platyptilia gonodactyla* ([D. & S.]) — Oldshoremore NC2058 (**108**) 20.vii.2013 — SDB & RJH

45.005 *1500* *P. calodactyla* ([D. & S.]) — Yaxley TL179916 (**31**) 10.vi.2013, genitalia det. BD — A. Frost *per* BD

45.006 *1502* *P. isodactylus* (Zell.) — Racks Moss NY031724 (**72**) 4.x.2013, det. KPB — R. & B. Mearns *per* KAN; Ballynagoul R543257 (**H8**) 22.viii.2013 — KGMB

45.008 *1504* *Gillmeria pallidactyla* (Haw.) — Cramalt Burn NT18982422 (**78**) 1.viii.2013 — M. Lindsay & T. de Bordes *per* RS

45.009 *1503* *G. ochrodactyla* ([D. & S.]) — Bridge of Allan NS799974 (**86**) 18.vii.2013 — D. Bryant *per* JTK; Cambus NS851937 (**87**) 18.vii.2013 — D. Bryant *per* JTK

45.012 *1509* *Stenoptilia pterodactyla* (Linn.) — Glen Orchy NN2327 (**98**) 17.vii.2013 — SDB & RJH; Sandside Bay NC9565 (**109**) 6.viii.2013, det. C. Hart — N. Littlewood *per* NM

45.013 *1508* *S. bipunctidactyla* (Scop.) — Portnalong NG344359 (**104**) 22.vii.2013 — K. Sadler *per* BN; Smoo NC4167 (**108**) 23.vii.2013 — SDB & RJH

45.018 *1508a* *S. islandicus* (Staud.), E of Lochan na Lairige, part of one of the lower slopes of Ben Lawers NN6040 (88) 18.vii.2013, new locality and only the second known locality in the British Isles, the other being 1.5 km to the west on Meall nan Tarmachan — SDB & RJH

45.019 *1506* *S. millieridactyla* (Bruand) — Swarland NU165035 (**68**) 21.vii.2013, conf. TJT — A.J. Fairclough *per* TJT

45.023 *1495* *Marasmarcha lunaedactyla* (Haw.) — Derwenlas SN722991 (**47**) 23.vii.2013, conf. PRW — A. Tadman *per* PRW

45.026 *1491* *Crombrugghia distans* (Zeller) — Earith TL390751 (**31**) 30.vii.2013, genitalia det. BD — D. Griffiths *per* BD; Gibraltar Point TF563584 (**54**) 2012 — T. Bagworth *per* MJG

45.027 *1492* *C. laetus* (Zell.) — Alsager SJ819545 (**58**) 9.viii.2013, genitalia det. M.J. Dale *per* SHH

45.033 *1510* *Merrifieldia leucodactyla* ([D. & S.]) — Burn of Craig NJ437253 (**93**) 11.vii.2013 — H. Rowe *per* MRY

45.038 *1522* *Hellinsia tephradactyla* (Hübn.) — Wimperhill, Wyre Forest SO742763 (**40**) small larvae on *Solidago virgaurea* 14.ix.2013 — ANBS *per* AGB; Commins Coch SH845028 (**47**) 22.vi.2013, conf. M.D. Haigh — PRW

45.041 *1520* *H. osteodactylus* (Zell.) — Dhoon SC456868 (**71**) 28.vii.2013 — L. Kneale *per* ISS

45.044 *1524* *Emmelina monodactyla* (Linn.) — Greenland ND247669 (**109**) 19.v.2013, det. C. Hart — P. Wright *per* NM; Shancurry G950099 (**H29**) 28.viii.2013 — KGMB

EPERMENIIDAE

47.004 *0484* *Epermenia aequidentellus* (Hofm.) — Cheltenham SO9519 (**33**) 1.viii.2013 — GHJM

47.006 *0481* *E. falciformis* (Haw.) — Banc Y Mwldan SN1948 (**46**) 11 ix 2013, male genitalia det. PRH — T. Allenby & I. Smith *per* PRH

CHOREUTIDAE

48.002 *0388* *Prochoreutis myllerana* (Fabr.) — Dundonnell saltmarsh NH0988 (**105**) 29.vi.2013, male genitalia det. MRY — SEM

48.003 *0387* *P. sehestediana* (Fabr.) — St Kew SX022770 (**2**) 23.viii.2013, male genitalia det. — GMT; Ynys-hir SN6896 (**46**) 15 viii 2013 — D. Williamson & M. Whiteside *per* PRH; Kirkby Moor TF224620 (**54**) 23.viii.2012, det. MJG — R. Scopes per MJG; Dundonnell saltmarsh NH0988 (**105**) 29.vi.2013, male genitalia det. MRY — SEM

TORTRICIDAE

49.001 *1013* *Olindia schumacherana* (Fabr.) — Banagher Glen NR (Strone Hill) C668046 (**H40**) 11.vii.2013, genitalia det. — KGMB

49.003 *1012* *Sparganothis pilleriana* ([D. & S.]) — Breakheart Quarry ST7596 (**34**) 21.vi.2013 — S. Chappell *per* GHJM

49.004 *1010* *Ditula angustiorana* (Haw.) — Craignure, Isle of Mull NM715373 (**103**) 8.viii.2013, conf. MRY — AS

49.008 *1008* *Philedone gerningana* ([D. & S.]) — Creag Meagaidh NN4486 (**97**) 8.vii.2013 — BPH

49.010 *1009* *Philedonides lunana* (Thunb.) — Sugar Loaf SO271184 (**35**) 19.iv.2013 — GMT, *Ent. Rec.* **126**: 9-11; Cronkley Fell NY8428 (**65**) 7.v.2013 — D. Williamson & P. Simmons *per* HEB; Kilmartin NR836987 (**98**) 7.v.2013, conf. MRY — D.C. Jardine *per* MRY

49.016 *0981* *Archips rosana* (Linn.) — Lochar Moss: Holmhead NY049707 (**72**) 1.viii.2013, det. KPB — R. B. Mearns *per* KAN

49.023 *0971* *Pandemis cinnamomeana* (Treits.) — Pelham Wood SZ5476 (**10**) 4.viii.2013 — B. Elliott & J. Halsey *per* MJW; Chippermore Port, Luce Bay NX289480 (**74**) 9.viii.2013, det. KPB — R. & B Mearns *per* KAN; Venlaw Community Woodland NT25294105 (**78**) 14.vii.2013, det. MRY — J. Woolliams *per* RS; Mugdock Country Park NS548779 (**86**) 10.viii.2013 — JTK

49.024 *0969* *P. corylana* (Fabr.) West Glenstockadale, Leswalt NX001611 (**74**) 15.vii.2013 — V. Harrison *per* KAN

49.025 *0970* *P. cerasana* (Hübn.) — Derynoyd Forest, Moneyneany H762957 (**H40**) 11.vii.2013 — KGMB

49.031 *0989* *Aphelia paleana* (Hübn.) — Cam Forest C767235 (**H40**) 12.vii.2013 — KGMB

49.032 *0990* *A. unitana* (Hübn.) — Portumna Forest Park M842037 (**H15**) 6.vii.2013 — KGMB

49.036 *0992* *Clepsis rurinana* (Linn.) — Ballyscanlan S541028 (**H6**) 10.vii.2013, male genitalia det. KGMB — TB

49.037 *0993* *C. spectrana* (Treits.) — Bowness-on-Solway NY207618 (**70**) 5.vii.2013 — L. Still *per* MRY

49.038 *0994* *C. consimilana* (Hübn.) — Craggan NN808173 (**88**) 13.vii.2013 — N. Gregory *per* JS

49.039 *0998* *Epiphyas postvittana* (Walker) — Peebles NT249405 (**78**) 17.xi.2013, det. MRY — J. Woolliams *per* RS; Camasnagaul NG0689 (**105**) 29.vi.2013, conf. JRL — M. Currie & R. Leverton *per* BN

49.041 *0999* *Adoxophyes orana* (F. v. R.) — Netherclay LNR ST205252 (**5**) 20.vi.2013, conf. DJLA from photograph — NWC, *Atropos* **49**: 93

49.043 *1026* *Exapate congelatella* (Clerck) — Radyr, Cardiff ST129800 (**41**) 17.x.2013, det. GMT — S. Bebb *per* DJS; Roybridge NN277811 (**97**) 25.xi.2013, conf. MRY — P. Brooks *per* MRY

49.044 *1025* *Tortricodes alternella* ([D. & S.]) — Culag NG887253 (**105**) 1.iii.2013 — BN

49.050 *1020* *Cnephasia stephensiana* (Doubl.) — Fersit NN352778 (**97**) 4.viii.2013 — P. Moore & H. Swift *per* TP

49.053 *1022a* *C. pumicana* (Zell.) — Eastbourne TV597995 (**14**) 12.viii.2013, male genitalia det. JRL — D. Lester *per* CRP; Wicken Fen - Sedge Fen TL5626670438 (**29**) 19.vii.2013, genitalia det. MJD — MJD *et al.*: Thrapston SP9978 (**32**) 22.vii.2013, genitalia det. — M. Hammond *per* DVM; Bishops Itchington, Bishops Bowl Lakes SP38305900 (**38**) 14.viii.2013, male genitalia det. — M. Kennard *per* NJS

49.054 *1023* C. *genitalana* P. & M. — Hammerwich SK068079 (**39**) 12.viii.2013, genitalia det. M.J. Dale — R. Sharp *per* DE

49.056 *1019* *C. conspersana* (Dougl.) — Woodmancote, nr. Cheltenham SO9627 (**33**) 7.vii.2013, female genitalia det. — J. Brock *per* RH

49.057 *1016* *C. longana* (Haw.) — Traethdy, Harlech SH574301 (**48**) larva in flower of *Leontodon saxatilis* 16.vi.2013, moth bred 8.viii.2013 — H. Bantock *per* ANG

49.059 *1033* *Tortrix viridana* Linn. — Derynoyd Forest, Moneyneany H762957 (**H40**) 11.vii.2013 — KGMB

49.063 *1035* *Acleris bergmanniana* (Linn.) — Forres NJ038585 (**95**) 9.vii.2013 — J. Hammond *per* MT

49.064 *1040* *A. caledoniana* (Steph.) — Musheramore W337861 (**H4**) 3.ix.2013 — KGMB; Nagles Mts (Knocknaskagh) W699949 (**H5**) 1.ix.2013, genitalia det. — KGMB

49.065 *1039* *A. comariana* (L. & Z.) — Tattynure H438800 (**H36**) 29.viii.2013 — P. Archdale *per* KGMB

49.066 *1038* *A. laterana* (Fabr.) — Derryhoo H408187 (**H30**) 24.ix.2013 — KGMB

49.067 *1059* *A. abietana* (Hübn.) — Philipshill Wood TQ0194 (**24**) 6.v.2013, male genitalia det. PRH — A.M.W. King per PRH

49.068 *1060* *A. maccana* (Treits.) — Craignure, Isle of Mull NM715373 (**103**) 5.v.2013, conf. MRY — AS

49.070 *1042* *A. rhombana* ([D. & S.]) — Shancurry G950099 (**H29**) 28.viii.2013 — KGMB

49.071 *1062* *A. emargana* (Fabr.) — Thrumster House ND333460 (**109**) 8.ix.2013, genitalia det. MRY — NM

49.076 *1054* *A. cristana* ([D. & S.]) — Conisbrough SE5098 (**63**) iv.2013 — T. Hayek *per* HEB

49.077 *1048* *A. variegana* ([D. & S.]) — Shancurry G950099 (**H29**) 28.viii.2013 — KGMB

49.078 *1043* *A. aspersana* (Hübn.) — Montrose Bay SWT Reserve NO702565 (**90**) 7.viii.2013, conf. MRY — P. Brooks *per* MRY; Shancurry G950099 (**H29**) 28.viii.2013 — KGMB

49.079 *1046* *A. shepherdana* (Steph.) — Pishiobury Park, Bishops Stortford TL4713 (20) 8.viii.2013, genitalia conf. CWP, first county record since 1883 — G. Smith *per* CWP

49.080 *1053* *A. hastiana* (Linn.) — Culbin Forest NJ000626 (**95**) 5.iv.2013 — MT

49.082 *1055* *A. hyemana* (Haw.) — Tregaron SN6861 (**46**) in RIS trap vi-vii 2013, male genitalia det. — PRH

49.084 *1045* *A. notana* (Don.) — Cramalt Burn NT18982422 (**78**) 1.viii.2013, det. MRY — M. Lindsay & T. de Bordes *per* RS

49.086 *1051* *A. logiana* (Clerck) — South Petherton ST431158 (**5**) to actinic light 31.x.2013, female genitalia det. P.H. Sterling — LM; Queen's Wood, Dymock SO671272 (**36**) 12.xii.2013 — M. Bradley *per* ANBS

49.087 *1061* *A. literana* (Linn.) — Glenmore River R994004 (**H6**) 7.v.2013 — KGMB

49.090 *1015* *Eulia ministrana* (Linn.) — Hill of Rattar ND244733 (**109**) 9.vii.2013 — NM

49.094 *0932* *Phtheochroa sodaliana* (Haw.) —Windmill Hill SP071475 (**37**) larval feedings on *Rhamnus cathartica* 26.viii.2013 — ANBS

49.097 *0936* *Cochylimorpha straminea* (Haw.) — Eyemouth NT929652 (**81**) 5.ix.2013, conf. MRY — BP

49.101 *0926* *Phalonidia manniana* (F. v. R) — Carron Dam NS876827 (**86**) 7.viii.2013, male genitalia det. MRY — H. Young *per* JTK

49.105 *0929* *Gynnidomorpha vectisana* (H. & W.) — Marshside SD3520 (**59**) 8.viii.2013 — SMP & C.A. Palmer

49.107 *0928* *G. permixtana* ([D. & S.]) — Oldshoremore NC2058 (**108**) 19.vii.2013, genitalia det. RJH — SDB & RJH

49.109 *0937* *Agapeta hamana* (Linn.) — Sandside Bay NC9565 (**109**) 16.vii.2013 — N. Littlewood *per* NM

49.111 *0954* *Eupoecilia angustana* (Hübn.) — Myroe Level C625280 (**H40**) 19.vi.2013 — KGMB

49.117 *0943* *Aethes margarotana* (Dup.) — Greatmoor SP7022 (**24**) 25.vi.2013, one female genitalia det. PRH — D.L. Wilton *per* MVA, *Ent. Rec.* **126**: 22—24

49.120 *0947* *A. smeathmanniana* (Fabr.) — North Uist NF823617 (**110**) 11.vii.2013, conf. MRY — S.E. Duffield *per* JBK

49.129 *0959* *Cochylidia rupicola* (Curt.) — Evington SK639044 (**55**) 9.vii.2013, genitalia det. A.J. Mackay — APR

49.132 *0956* *C. implicitana* (Wocke) — Hammerwich SK068079 (**39**) 5.viii.2013, genitalia det. M.J. Dale — R. Sharp *per* DE

49.135 *0963* *Cochylis flaviciliana* (Westw.) — Tramore Burrow S611005 (**H6**) 21.vii.2013, male genitalia det. KGMB — TB

49.137 *0964* *C. dubitana* (Hübn.) — Kildary NH7775 (**106**) 7.viii.2013, conf. MRY — N. Richards *per* MRY; Gortigrenane W757573 (**H4**) 3.vi.2013 — KGMB

49.139 *0966* *C. atricapitana* (Steph.) — nr Loch Leir, Forsinard RSPB Reserve NC951465 (**108**) 18.vii.2013 — NL

49.143 *1114* *Eudemis porphyrana* (Hübn.) — Biggleswade TL1944 (**30**) 2.viii.2013 genitalia det. DVM — L. Burgess *per* DVM

49.146 *1089* *Apotomis semifasciana* (Haw.) — Carrowmenagh C837039 (**H40**) 13.vii.2013 — C. Bertrand *per* KGMB

49.148 *1091* *A. lineana* ([D. & S.]) — Auckley Common SE6602 (**63**) larval spinning on *Salix alba* 26.v.2013, moth reared 1.vii.2013 — S.R. Sowden *per* HEB

49.149 *1092* *A. turbidana* (Hübn.) — Over Courance Lodge, Courance NY051908 (**72**) 18.vii.2013 — B. D. Henderson *per* KAN

49.150 *1093* *A. betuletana* (Haw.) — Portnalong NG344359 (**104**) 22.vii.2013 — K. Sadler *per* BN

49.151 *1094* *A. capreana* (Hübn.) — Brookthorpe SO8312 (**33**) 13.vii.2013 — S. Chappell *et al. per* RH; Derwenlas SN722991 (**47**) 23.vii.2013, conf. M.D. Haigh — A. Tadman *per* PRW; Bryn-coed-ifor SH793206 (**48**) 12.vii.2013 — H. Burt *per* ANG

49.153 *1096* *A. sauciana* (Fröl.) — Cheviot NT920210 (**68**) 14.viii.2013 — R.J. Arnfield *per* TJT; Coire Fee NO249750 (**90**) 8.vi.2013, conf. MRY — P. Brooks *per* MRY

49.154 *1087* *Orthotaenia undulana* ([D. & S.]) — The Cross Lochs Forest, Forsinard NC858464 (**108**) 24.vii.2013 — NL

49.156 *1083* *Hedya nubiferana* (Haw.) — Banagher Glen NR (Strone Hill) C668046 (**H40**) 11.vii.2013 — KGMB

49.157 *1082* *H. pruniana* (Hübn.) — Burnmouth NT956618 (**81**) 9.vi.2013, conf. MRY — BP

49.158 *1084* *H. ochroleucana* (Fröl.) — Dolforwyn Woods SO158956 (**47**) 1.vii.2013, conf. PRW — D. Boyes *per* PRW; Rhewl SJ110615 (**50**) 17.vii.2013 — GMT

49.164 *1067* *Celypha cespitana* (Hübn.) — Thrislington Quarry NNR NZ3132 (66) 17.vii.2013, first VC record since at least 1905 — TJB & K. Dover

49.172 *1073* *Phiaris schulziana* (Fabr.) — Megget NT19582317 (**78**) 7.vii.2013, det. MRY — T. de Bordes *per* RS; Crater Loch, Isle of Mull NM4753 (**103**) 27.vi.2013, conf. MRY — D. Williamson *per* AS; Hill of Rattar ND244733 (**109**) 18.vi.2013, det. MRY — NM

49.173 *1075* *P. micana* ([D. & S.]) — Garry Wood C950307 (**H39**) 11.vii.2013, genitalia det. — KGMB

49.183 *1108* *Lobesia abscisana* (Doubled.) — Middletown SJ305121 (**47**) 6.viii.2013, conf. PRW — D. Boyes *per* PRW

49.187 *1098* *Endothenia oblongana* (Haw.) — Dadlington SP405977 (**55**) 7.vii.2013, genitalia det. A.J. Mackay – A.M. Johnson *per* APR

49.188 *1099* *E. marginana* (Haw.) — Lochar Moss: Holmhead NY043710 (**72**) 23. viii.2013, det. KPB — R. & B. Mearns *per* KAN; Glassoch Farm NX340697 (**74**) 27.viii.2013, det. KPB — R. Mearns *per* KAN

49.194 *1111* *Bactra lancealana* (Hübn.) — Hill of Rattar ND244733 (**109**) 10.vii.2013 — NM

49.196 *1111a* *B. lacteana* Caradja — Aberystwyth SN6283 (**46**) in RIS trap 2013, male genitalia det. — PRH; South Uist NF791153 (**110**) 18.vii2013, genitalia prep. JBK, conf. L. Aarvik from photograph — JBK

49.200 *1216* *Enarmonia formosana* (Scop.) — Talybont SN6589 (**46**) 22 vii 2013 — T. Allenby & I. Smith *per* PRH

49.204 *1122* *Ancylis obtusana* (Haw.) — Bedford Purlieus TL0399 (32) 26.vi.2013, first VC record since 1907 — M. Hammond *per* DVM

49.207 *1119* *A. geminana* (Don.) — Ballyscanlan S537025 (**H6**) 27.vi.2013 — TB

49.209 *1119* *A. diminutana* (Haw.) — Srah Bog R808983 (**H15**) 6.vii.2013, genitalia det. — KGMB

49.211 *1128* *A. myrtillana* (Treits.) — Craignine NX429822 (**73**) 9.vii.2013, det. KPB — R. & B. Mearns *per* KAN; Creggan H622790 (**H36**) 20.vi.2013, genitalia det. — KGMB

49.212 *1129* *A. apicella* ([D. & S.]) — Lakenheath TL726825 (**26**) 9.vi.2013 — M. Dale & D. Grundy *per* AWP

49.213 *1127* *A. paludana* Barr. — Oulton Marshes TM505929 (**25**) 9.viii.2013 — Suffolk Moth Group *per* AWP

49.214 *1126* *A. badiana* ([D. & S.]) — Howey SO052590 (**43**) 25.v.2013, conf. VFC — D. & C. Parry *per* PJC & VFC

49.231 *1155* *Epinotia brunnichana* (Linn.) — Swarland NU165035 (**68**) 17.viii.2013 — A.J. Fairclough *per* TJT; Craignure, Isle of Mull NM715373 (**103**) 3.viii.2013, conf. MRY — AS

49.234 *1150* *E. abbreviana* (Fabr.) — Ness Wood (Oaks Wood) C501109 (**H40**) larval feeding signs on *Ulmus glabra* 19.vi.2013 — KGMB

49.237 *1144* *E. signatana* (Dougl.) — Milden Hall TL946464 (**26**) adult to light 13.vii.2013 — AWP & N. Sherman; Corard Point, Upper Lough Erne (**H33**) 16.vii.2013, genitalia det. — JMcC

49.238 *1147* *E. cruciana* (Linn.) — Llanddewi SO103686 (**43**) 1.viii.2013, conf. PJC — I. & R. Standen *per* PJC & VFC

49.239 *1148* *E. mercuriana* (Fröl.) — Musheramore W329852 (**H4**) 3.ix.2013 — KGMB

49.242 *1145* *E. nanana* (Treits.) — Repps-with-Bastwick TG4217 (**27**) 20.vii.2013, first documented record, female genitalia det. JRW — S. Wright *per* JRW

49.243 *1135* *E. demarniana* (F. v. R.) — Brookthorpe SO8312 (**33**) 13.vii.2013 — S. Chappell *et al. per* RH

49.251 *1146* *E. rubiginosana* (H.-S.) — Nosterfield NR SE2779 (**65**) 5.vii.2013 genitalia det. HEB — CHF, HEB *et al.*; Dunnet Forest ND223698 (**109**) 5.vii.2013, det. J. Clifton — NM

49.255 *1138* *E. nisella* (Cl.) — Castle Loch, Mochrum NX294539 (**74**) 9.viii.2013, det. KPB — R. & B. Mearns *per* KAN

49.257 *1166* *Zeiraphera griseana* (Hübn.) — Loch Pattack NN545789 (**97**) 23.viii.2013 — B. Brodie *per* TP; RSPB Forsinard Cnoc Alltain Dubh NC993472 (**109**) 8.viii.2013 — N. Littlewood *per* NM

49.259 *1163* *Z. ratzeburgiana* (Saxesen) — Meeth Quarry SS5308 (**4**) 10.viii.2013 — RJH; Briddlesford Copse SZ5490 (**10**) 10.viii.2013, conf. MJW — S.R. Plummer *per* MJW

49.260 *1165* *Z. isertana* (Fabr.) — Craignure, Isle of Mull NM715373 (**103**) 10.viii.2013, conf. MRY — AS

49.265 *1201* *Eucosma cana* (Haw.) — Creggan H624789 (**H36**) 16.vii.2013 — KGMB

49.266 *1200* *E. hohenwartiana* ([D. & S.]) — Revack NJ025254 (**95**) 6.vii.2013 — MRY

49.269 *1197* *E. campoliliana* ([D. & S.]) — Garry Wood C950307 (**H39**) 12.vii.2013 — KGMB

49.272 *1193* *E. tripoliana* (Barrett) — Teesmouth NZ5124 (**66**) 1.viii.2013, male genitalia det. — R. Woods *per* TJB

49.275 *1192* *E. conterminana* (Guen.) — Bellflask SE3077 (**65**) 26.viii.2013. conf. HEB — B. Morland *per* CHF

49.278 *1171* *Gypsonoma minutana* (Hübn.) — Farley SU2229 (**8**) 1.viii.2013 — L. Evans *per* EGS & MHS; Sapcote SP490937 (**55**) 24.vii.2013 — G.E. Calow *per* APR

49.280 *1170* *G. oppressana* (Treits.) — Middletown SJ305121 (**47**) 15.vii.2013, conf. PRW — D. Boyes *per* PRW; Upton, Chester (**58**) 22.vii.2013 — R. Wilkinson *per* SHH

49.281 *1168* *G. sociana* (Haw.) — Creggan H624789 (**H36**) 16.vii.2013, genitalia det. — KGMB

49.284 *1186* *Epiblema sticticana* (Fabr.) — Knockando NJ188425 (**95**) 4.vi.2013 — MT

49.285 *1184* *E. scutulana* ([D. & S.]) — Creggan Visitor Centre H624789 (**H36**) 21.vi.2013 — KGMB

49.286 *1184a* *E. cirsiana* (Zell.) — Ringabella Bay W780575 (**H4**) 2.vi.2013 — KGMB

49.288 *1183* *E. foenella* (Linn.) — Glasbury SO180390 (**43**) 13.vii.2013 — PJC & VFC

49.292 *1174* *Notocelia cynosbatella* (Linn.) — Baltasound (**112**) 4.vii.2013, first documented record — M. Pennington *per* PH

49.293 *1180* *N. tetragonana* (Steph.) — Traethdy, Harlech SH574301 (**48**) 4.vii.2013, genitalia det. — H. Bantock *per* ANG

49.298 *1176* *N. trimaculana* (Haw.) — Carrowmenagh C837039 (**H40**) 13.vii.2013, genitalia det. KGMB — C. Bertrand *per* KGMB

49.302 *1207a* *Gravitarmata margarotana* (Hein.) — Dadlington (**55**) 7.v.2013, det. M. Skevington — A.M Johnson *per* APR

49.304 *1207* *Clavigesta purdeyi* (Durrant) — Wellington SJ653122 (**40**) 15.viii.2012, first documented record — K. Fowler *per* AGB

49.310 *1286* *Dichrorampha sedatana* Busck — Kingsthorpe SP7463 (**32**) 7.vi.2013, swept from *Tanacetum vulgare* — P.D. Sharpe *per* DVM; Maze Park NZ4619 (**62**) 19 & 26.v.2013, genitalia det. R. Woods — R. Woods *per* HEB; Denaby Ings NR SE4901 (**63**) 21.v.2013, genitalia det. — HEB; Kildary NH7775 (**106**) 24.vi.2013, genitalia conf. JRL — N. Richards *per* MRY

49.311 *1287* *D. aeratana* (P. & M.) — Overstrand TG2440 (**27**) 30.vi.2013, genitalia det. J. Clifton — B. Murphy *per* JRW; Nosterfield NR SE2779 (**65**) 5.vii.2013, genitalia det. HEB — CHF & HEB; Kildary NH7775 (**106**) 23.vi.2013, genitalia conf. MRY — N. Richards *per* MRY

49.313 *1279* *D. acuminatana* (L. & Z.) — Inver NO2293 (**92**) 16.vii.2013 — MRY

49.319 *1275* *D. flavidorsana* (Knaggs) — Bonchurch SZ5777 (**10**) 4.viii.2013, male genitalia det. B. Elliott — B. Elliott & J. Halsey *per* MJW; St. Anne's LNR SD3130 (**60**) 30.vii.2013 — SMP & C.A. Palmer; Sharow SE3370 (**64**) 4.viii.2013, genitalia det. CHF — J C Warwick *per* CHF; Alva Glen NS884974 (**87**) 14.viii.2013 det. MRY — H. Young *per* JTK; Montrose Bay SWT Reserve NO702565 (**90**) 8.viii.2013, conf. MRY — P. Brooks *per* MRY

49.329 *1266a* *Cydia illutana* (H. – S.) — Clumber Park SK628768 (**56**) 7.vii.2013, three females genitalia det. TJT — N. & M. Tuck *per* TJT

49.331 *1270* *C. corollana* (Hübn.) — Monks Wood (31) in RIS trap 17.v.1993, genitalia det. K. Royles in 2013, conf. BD & JRL from photograph, first record since 1982 — K. Royles *per* BD, *Ent. Rec.* **126**: 11-12

49.335 *1254* *C. strobilella* (Linn.) — Chicksands Wood TL1040 (30) 5.v.2013, bred from spruce cones, first VC record since VCH — A.M. & M.G. Banthorpe *per* DVM

49.343 *1262* *C. amplana* (Hübn.) — Skegness (**54**) 18.viii.2012 — N. Lound per MJG

49.3431 *1215* *Thaumatotibia leucotreta* (Meyr.) — Swindon Lane, Cheltenham SO9424 (**33**) 25.viii.2013, to MV light — RH

49.345 *1219* *Lathronympha strigana* (Fabr.) — Craignure, Isle of Mull NM715373 (**103**) 5.vii.2013, conf. MRY — AS

49.348 *1243* *Grapholita pallifrontana* (L. & Z.) — Charlton Mackrell ST52 (**5**) 13.vi.2013 — MSP

49.351 *1252* *G. lunulana* ([D. & S.]) — Saxilby Flood SK894748 (**53**) 22.v.2013, male genitalia det. — MJG

49.354 *1251* *G. jungiella* (Clerck) — Coolready R667649 (**H8**) 24.v.2013 — KGMB

49.3541 *1248* *G. molesta* (Busck) — St Andrews NO505168 (**85**) larvae in dining hall apples 23.x.2013, moths bred — S. Millar *per* DWWD

49.356 *1249* *G. lobarzewskii* (Nowicki) — Ware TL3515 (**20**) 22.vi.2013, genitalia det. SHH — G. Lightfoot *per* CWP; Pucketty Farm, Faringdon SU312984 (**22**) 15.vii.2013, genitalia det. — MFVC

49.358 *1246* *G. tenebrosana* (Dup.) — Killavullen W645993 (**H5**) larvae in plums 22.viii.2013 — KGMB

49.359 *1245* *G. janthinana* (Dup.) — The Tooks, Kirkton NX954829 (**72**) 31.vii.2013, det. KPB — R. & B. Mearns *per* KAN

49.361 *1228a* *Pammene ignorata* Kuzn. — Chilbolton Down SU387383 (**12**) caught flying around *Acer campestre* 30.v.2002, female genitalia prep. B Elliott, recently det. L. Aarvik from photograph — B. Elliott *per* MJW; Elfhill NO800849 (**91**) 26.vi.1993, female genitalia prep. MRY, recently det. L. Aarvik from photograph — MRY, **New to Scotland**

49.362 *1227* *P. giganteana* (Peyer) — Glenville, Talybont SH589220 (**48**) spring 2013, genitalia det. ANG — J.M. Hicks *per* ANG

49.369 *1226* *P. agnotana* Rebel — Hilsea Lines NR, Portsmouth SU6604 (**11**) 18.v.2013, female genitalia prep. JRL, det. R. Terry & K. Larsen — MRY, JEY & JRL

49.372 *1232* *P. populana* (Fabr.) — Kilpatrick T248666 (**H12**) 08.viii.2013 — MO'D

49.373 *1231* *P. spiniana* (Dup.) — Lakenheath TL726825 (**26**) adult to light 30.viii.2013 — Suffolk Moth Group *per* AWP; Bellflask SE3077 (**65**) 26.viii.2013, genitalia det. CHF — B. Morland *per* CHF

49.375 *1234* *P. regiana* (Zell.) – Hutton Conyers SE323733 (**65**) 21.vii.2013, first documented record — CHF

49.379 *1272* *P. aurana* (Fabr.) — Dhoon SC456868 (**71**) 10.vii.2013, first documented record — L. Kneale *per* ISS

49.380 *1271* *P. gallicana* (Guen.) — Trebarfoote SX183992 (**2**) 26.vii.2012 — G. Davis *per* LACT

49.381 *1221* *Strophedra weirana* (Dougl.) — Coed-y-bedw, Cardiff ST108825 (**41**) 7.vi.2013 — GMT

49.382 *1222* *S. nitidana* (Fabr.) — Pelham Wood SZ5476 (**10**) 4.viii.2013 — B. Elliott, J. Halsey *per* MJW

PYRALIDAE

62.005 *1426* *Achroia grisella* (Fabr.) — Dumfries NX9776 (**72**) 2.ix.2013 — P. Norman *per* KAN

62.007 *1433* *Cryptoblabes bistriga* (Haw.) — Swarland NU165035 (**68**) 22.vii.2013, conf. TJT — A.J. Fairclough *per* TJT

62.020 *1451a* *Etiella zinckenella* (Treits.) — Chepstow ST534932 (**35**) 7.x.2013 — N. Felstead *per* SDSB; Muston TA0979 (**61**) 22.x.2013 — P.Q. Winter *per* HEB, **New to Wales**

62.021 *1441* *Oncocera semirubella* (Scop.) — Meeth Quarry SS5308 (**4**) 1.viii.2013 — P. Butter *per* RJH; Aldbury Nowers SP 949138 (20) 15.vii.2013, first county record since before 1834 — CWP

62.027 *1455* *Dioryctria simplicella* Hein. — Hepburn Wood NU071248 (**68**) 14.viii.2013 — R.J. Arnfield *per* TJT

62.028 *1454* *D. abietella* ([D. & S.]) — Loch Pattack NN545789 (**97**) 23.viii.2013, conf. M. Taylor — B. Brodie *per* TP

62.035 *1439* *Acrobasis advenella* (Zinck.) — Kailzie NT281386 (**78**) 2.viii.2013, det. MRY — RS & J. Woolliams

62.038 *1437* *A. consociella* (Hübn.) — Middletown SJ305121 (**47**) 26.vii.2013, conf. PRW — D. Boyes *per* PRW; Stockton-on-Tees NZ4318 (**66**) 26.vii.2013, det. CHF from photograph — J.C. Mason *per* TJB

62.039 *1486* *Apomyelois bistriatella* (Hulst) — Skelton NZ6619 (**62**) 14.vii.2013, genitalia det. HEB — D. Money *per* HEB

62.050 *1469* *Euzophera cinerosella* (Zell.) — North Ferriby TA0026 (**61**) 21.vi.2013, genitalia det. HEB — I. Marshall *per* HEB

62.057 *1485* *Phycitodes maritima* (Tengst.) — Shancurry G950099 (**H29**) 28.viii.2013, genitalia det. — KGMB

62.059 *1484* *P. saxicola* (Vaughan) — Middletown SJ305121 (**47**) 23.vii.2013, genitalia det. ANG — D. Boyes *per* PRW

62.063 *1475* *Ephestia kuehniella* Zell. — Boat of Garten NH940184 (**95**) 28.ii.2013 — MT

62.065 *1474* *E. unicolorella* Staud. (= *parasitella* auctt.) — Alsager SJ819545 (**58**) 7.vii.2013, female genitalia det. — M. Dale *per* SHH

62.069 *1432* *Anerastia lotella* (Hübn.) — Breach Hill SU0146 (**8**) 17.vii.2013 — EGS & MHS

62.076 *1415* *Hypsopygia glaucinalis* (Linn.) — Carham Hall, Carham NT804388 (**68**) 13.viii.2013 — TJT & N. Cook; Bridge of Allan NS799974 (**86**) 16.viii.2013 — D. Bryant *per* JTK

CRAMBIDAE

63.007 *1362* *Pyrausta purpuralis* (Linn.) — Blawthorn Moss NNR NS881679 (**84**) 8.viii.2013 — M. G. Cubitt *per* MRY

63.011 *1369* *Uresiphita gilvata* (Fabr.) — East Cornwall Farm near Callington SX385697 (**2**) 30.ix.2013, det. LACT — M.G.C. Atkinson *per* LACT; Llanstephan SO123417 (**43**) 20.vii.2013, conf. VFC — C. Ledbury *per* PJC & VFC; Cottingham TA0432 (**61**) 21.x.2013 — E. Hediger *per* HEB

63.014 *1370* *Sitochroa palealis* ([D. & S.]) — Owston SE5511 (**63**) 26.vii.2013 — M. Prior *per* HEB

63.016 *1386* *Anania fuscalis* ([D. & S.]) — Umbra C728360 (**H40**) 19.vi.2013 — KGMB

63.020 *1380* *A. perlucidalis* (Hübn.) — Middletown SJ305121 (**47**) 18.vii.2013 conf. PRW — D. Boyes *per* PRW

63.034 *1390* *Udea prunalis* ([D. & S.]) — South Uist NF791153 (**110**) 28.vii.2013, conf. MRY — JBK

63.037 *1392* *U. olivalis* ([D. & S.]) — Banagher Glen NR (Strone Hill) C668046 (**H40**) 11.vii.2013 — KGMB

63.038 *1405* *Pleuroptya ruralis* (Scop.) — Ballynagoul R543257 (**H8**) 22.viii.2013 — KGMB; Tattynure H438800 (**H36**) 29.viii.2013 — P. Archdale *per* KGMB

63.039 *1396* *Mecyna flavalis* (Caradja) — Barnham Broom TG0707 (27) 30.vii.2013, det. J.Clifton , first VC record since 19th C — J & J Geeson *per* JRW

63.041 *1410* *Agrotera nemoralis* (Scop.) — Bawdsey Hall TM347394 (**25**) 21.vi.2013 — MJD

63.042 *1397a* *Diplopseustis perieresalis* (Walk.) — Rawcliffe, York SE5854 (**62**) indoors 19 & 20.xii.2012 & 19.i.2013 thought to originate from a recently purchased *Phoenix canariensis* — A. Korycinska *per* HEB

63.043 *1402* *Diasemia reticularis* Linn.) — Dhoon SC456868 (**71**) 7.viii.2013 — L. Kneale *per* ISS

63.046 *1403a* *Duponchelia fovealis* Zell. — Watton TF9100 (**28**) 01.i.2013 — C. Pye *per* JRW; Old Weston TL099777 (**31**) 4.vii.2013 — K. Royles *per* BD; Eathorpe SP391691 (**38**) indoors 15.iii.2013 — D. Smith p*er* NJS; Great Sutton SJ381751 (**58**) 28.vii.2013 — M. Bellingham *per* SHH; Ardentinny NS188873 (**98**) 4.v.2013, det. R. Leverton — S.J. Petty *per* MRY

63.047 *1404* *Spoladea recurvalis* (Fabr.) — Bonchurch SZ5777 (**10**) 2.x.2013 — J. Halsey *per* MJW; Walcott TG3530 (**27**) 4.viii.2013 — M. A'Court *per* JRW

63.048 *1408* *Palpita vitrealis* (Rossi) — Sicklesmere TL882603 (**26**) 8.x.2013 — S. Dumican *per* AWP; Holme TL191881 (**31**) 13.xi.2013 — P. Horsnail *per* BD; Ffynnon Gynydd SO165419 (**43**) 6.x.2013, conf. PJC — S. & J. Mullard *per* PJC & VFC; Hutton Conyers SE323733 (**65**) 25.x.2013 — CHF. Bridge of Allan NS786972 (**86**) 8.x.2013 — D. Bryant *per* JTK; Gerraquoy, South Ronaldsay ND477931 (**111**) 6.x.2013, det. SG — S. & S. Sankey *per* SG; Strand HU431462 (**112**) 22.x.2013 — M. Ponsford & J.K Wilmott *per* PH

63.051 *1400* *Antigastra catalaunalis* (Dup.) — Torpoint SX426550 (**2**) 6.x.2013, det. LACT — D. Allan *per* LACT

63.054 *1409a* *Cydalima perspectalis* (Walk.) — Bonchurch SZ5777 (**10**) 27.vii.2013 — J. Halsey *per* MJW; Chandlers Ford SU4121 (**11**) 3.x.2013 — B. Elliott *per* MJW; Longstock SU3638 (**12**) larvae on *Buxus* sp. in garden centre 31.viii.2013, subsequently bred through 5.ix.2013 — T.J. Norriss *per* MJW; Costessey (**27**) 3.x.2013, first of four records — M. Casey *per* JRW; Luton TL0923 (**30**) 30.viii.2013 — A. Grimsey *per* DVM; Prestbury, Cheltenham SO9623 (**33**) 6.viii.2013 — K. Heron & J. Jones *per* RH; Grantham SK887339 (**53**) 20.x.2013 — D. & S. Jardine *per* MJG; Team Valley NZ2460 (**66**) 23.ix.2013, det. TJT from photograph, found on the outside of the premises of a wholesale flower importer, who have confirmed that they do import *Buxus* plants from The Netherlands — M. Sharp *per* TJB

63.059 *1356a* *Evergestis limbata* (Linn.) — Sapcote SP490937 (**55**) 19.vii.2013 — G.E. Calow *per* APR

63.060 *1358* *E. pallidata* (Hufn.) — Glen Coe Village NN1158 (**98**) 16.vii.2013, conf. MRY — C. Farmer *per* AM

63.063 *1334a* *Scoparia basistrigalis* Knaggs — Glasbury SO180390 (**43**) 20.vii.2013, male genitalia det. PJC — PJC & VFC

63.065 *1335* *S. ancipitella* (La Harpe) — Stow-on-the-Wold SP1926 (**33**) 18.vii.2013, male genitalia det. — JRL

63.067 *1338* *Eudonia lacustrata* (Panzer) — Kilmartin NR836987 (**98**) 6.vii.2013, conf. MRY — D.C. Jardine *per* MRY

63.069 *1342* *E. angustea* (Curt.) — Tramore S577013 (**H6**) 27.viii.2013 — TB

63.074 *1344* *E. mercurella* (Linn.) — The Cabrach NJ377290 (**94**) 20.vii.2013 conf. MRY — P. Moore *per* MRY

63.075 *1336* *E. pallida* (Curt.) — Livox Wood, nr Chepstow ST540973 (**35**) 26.vi.2013 — R. Hobson & GMT

63.077 *1290* *Chilo phragmitella* (Hübn.) — Bishop's Bog NT786404 (**81**) 11.vii.2013, conf. MRY — BP

63.079 *1292* *Calamotropha paludella* (Hübn.) — Meeth Quarry SS5308 (**4**) 1 & 10.viii.2013 — P. Butter *per* RJH

63.080 *1293* *Chrysoteuchia culmella* (Linn.) — Myroe Level C625280 (**H40**) 19.vi.2013 — KGMB

63.083 *1297* *Crambus uliginosellus* Zell. — Needingworth TL346720 (**31**) 15.vii.2013, conf A.M. Davis — I. Fisher *per* BD

63.084 *1298* *C. ericella* (Hübn.) — Laxey SC440843 (**71**) 17.vii.2013 — R. Cripps *per* ISS

63.086 *1301* *C. lathoniellus* (Zinck.) — Sperrins (Cloghornagh) H639975 (**H40**) 10.vii.2013 — KGMB

63.092 *1303* *Agriphila selasella* (Hübn.) — Inver Bay NH8582 (**106**) 25.vii.2013, conf. MRY — N. Richards *per* MRY; — North Uist NF817596 (**110**) 28.vii.2013, genitalia prep. JBK, conf. JRL — S.E. Duffield *per* JBK; Ballynagoul R543257 (**H8**) 22.viii.2013 — KGMB

63.099 *1313* *Catoptria pinella* (Linn.) — Carr Brae, Dornie NG887253 (**105**) 21.viii.2013, conf. MRY — BN

63.100 *1314* *C. margaritella* ([D. & S.]) — Evington SK639044 (**55**) 15.vii.2013 — APR

63.109 *1323* *Pediasia contaminella* (Hübn.) — Sand Bay ST330655 (**6**) 20.vii.2013 — PAB

63.110 *1324* *P. aridella* (Thunb.) — Norton Spit SZ3489 (10) 27.vii.2013, det. MJW, first VC record for over 100 years — S. Davies *per* MJW

63.112 *1325* *Platytes alpinella* (Hübn.) — Maenporth SW793295 (**1**) 18.vii.2013 — G. Davis *per* LACT; Ludlow SO522741 (**40**) 22.vii.2013, det. A.T. Jacques from photograph, conf. ANBS — G. Thomas *per* AGB

63.114 *1345* *Elophila nymphaeata* (Linn.) — Carrowmenagh C837039 (**H40**) 13.vii.2013 — C. Bertrand *per* KGMB

63.115 *1331* *Acentria ephemerella* ([D. & S.]) — Bridge of Allan NS799974 (**86**) 18.vii.2013 — D. Bryant *per* JTK; Ordiquhill, by Cornhill NJ574556 (**94**) 27.vii.2013 — R. Leverton *per* MRY

63.116 *1354* *Cataclysta lemnata* (Linn.) — Hutton Conyers SE323733 (**65**) 4.viii.2013 — CHF; Caron Dam NS876827 (**86**) 7.viii.2013 — H. Young *per* JTK

63.1171 *1351* *Parapoynx diminutalis* Snellen — Endsleigh Garden Centre, near Ivybridge SX621558 (**3**) one on side of aquatic plant tank 9.vii.2013 — RJH

63.119 *1355a* *Musotima nitidalis* (Walk.) — Wych Cross TQ443323 (**14**) 20.viii.2013, det. CRP from photograph — H. Prendergast *per* CRP

63.120 *1328* *Schoenobius gigantella* ([D. & S.]) — Byfleet TQ0660 (**17**) 13.vii.2013, conf. GAC — R.A. Alder *per* GAC

63.121 *1329* *Donacaula forficella* (Thunb.) — Middletown SJ305121 (**47**) 13.vii.2013, conf. PRW — D. Boyes *per* PRW

Corrections

To the 2012 Review

The following record should be deleted due to misidentification:

49.251 *1146* *Epinotia rubiginosana* (H. - S.) —Acarsaid, Eriskay NF789098 (**110**) 24.v.2012 — J.B. Kemp *per* MRY

AUTUMN WEBWORM *HYPHANTRIA CUNEA* (DRURY, 1773) (LEP.: ARCTIIDAE) NEW TO BRITAIN

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Abstract

Hyphantria cunea (Drury, 1773) (Lepidoptera: Arctiidae), is reported formally as a new species for Britain from Hertfordshire. The adult male moth is illustrated in colour.
Keywords: *Hyphantria cunea*, Arctiidae, Britain.

Introduction

On the morning of 29 September 2014, an unfamiliar white moth was seen sitting on the perspex collar of my 125w MV Robinson-pattern moth trap which had operated the previous night in my garden.

In the dim light at approximately 6 am, my initial reaction was that it was a second brood Yellow-tail *Euproctis similis* (Fuessly), having heard several reports of this moth from the week before in other parts of the country. With the moth potted up and brought indoors, it became apparent that my initial identification was wrong; the moth did not appear to have a "yellow tail" and the general wing-shape was wrong for that species. I then turned to the assumption that it must be a near immaculate example of the White Ermine *Spilosoma lubricipeda* (L.); although the flight period did not match up, that was not such a surprise after having late appearances of other species in the garden recently. Water Ermine *Spilosoma urticae* (Esper) was also considered (though that would have been an exceptional record for Hertfordshire), because of the lack of black spotting. However, in overall appearance and in particular the narrow forewings it did not fit either of these species. Furthermore, the abdomen was pure white, without any yellow scales. The next day I took some digital images of the moth and e-mailed them to Colin Plant, who initially had the same view that it was probably a species of *Spilosoma*, although he quite rightly emphasised the difficulties of naming moths from photographs. Fortunately, we had already planned to meet up a few days later and so the moth, now set, was shown "in the flesh" to Colin whereupon he immediately recognised it as *Hyphantria cunea* – a species with which he is familiar through collecting in Europe. Closer examination of the antennae, palpi and legs confirmed the identification. The moth is male and is deposited in the collection of Colin W. Plant (Plate 1).

Recognition

The genus *Hyphantria* Harris is superficially similar to *Spilosoma* Curtis and in photographs the two may appear identical. However, in life the two genera are more easily separated on general appearance (their "jizz"). *Hyphantria* has slightly more slender wings whilst the scales on the top of the head are rough and erect (more or

Plate 1. *Hyphantria cunea* (Drury). Stevenage, Hertfordshire 29.ix.2014

less flattened in *Spilosoma*). The dorsal surface of the abdomen of *Hyphantria* may be pure white scaled, a condition never found in *Spilosoma*. In closer examination, the palpi of *Hyphantria* are significantly shorter than those of *Spilosoma* and there are no ventral spurs in the apical quarter of the hind tibia (present in *Spilosoma*). These and other details are further explained in Witt *et al* (2011).

Witt *et al.* (2011) indicated the likelihood that more than one species may be included under the name *cunea* in its native Nearctic Region, referring to Forbes (1960) who had separated *H. textor* on the basis of that species being entirely white, including the shaft of the antenna. However, as far as can be ascertained, only a single species, with extensive black markings, was introduced to Europe. If this is so, then *H. cunea* in Europe is an extremely variable species ranging from an essentially black and white form to examples with just a single black costal dot – as in the Hertfordshire specimen. It appears that the hindwings are always immaculate.

Possible origins

Hyphantria cunea is a North American species that was first introduced to the Palaearctic in Hungary in the 1940s. It has since spread, possibly aided by further introductions and is currently frequent in central, southern and Eastern Europe and also in western parts of Asia. In France, the nearest recorded locality to Britain, it has a very restricted distribution around the Paris area. It is unclear whether the Hertfordshire Moth is a primary immigrant or a vagrant that has been brought in locally through importation. The area of Stevenage where it was caught is home to

many factories, in particular a large tyre distribution centre; it is possible that the moth have been brought in via here.

Hyphantria cunea is said to be an invasive species and in America is referred to there as the Fall Webworm. In Europe, it is an important orchard pest, but also appears as an "aesthetic pest" in parks and gardens. The larvae are polyphagous on deciduous trees, where they build characteristic "nests", but they also feed on herbaceous plants (Witt *et al.*, 2011). Happily, unlike some members of the Lymantriidae, the larvae do not have deciduous, urticating hairs.

Braasch (1976) considered that (at that date) it had probably reached the limits of its geographical range in Europe and that phytosanitary measures were no longer necessary. He added that in the more northerly countries of Europe, the temperature requirements of the species for overwintering are not available so that the insect could not reach the stage necessary for diapause, although a mass outbreak might occur in the year of introduction of larvae from outside.

The British checklist

In the new checklist of British Lepidoptera (Agassiz, *et al*, 2013), *Hyphantria cunea* belongs between 72.021 *Spilosoma urticae* (Esp.) and 72.022 *Diaphora mendica* (Cl.). For the benefit of computerised recording programs that currently retain the Bradley & Fletcher (1979) numbering system, the code number 2062a is appropriate.

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FIVE NEW SPECIES OF MICROLEPIDOPTERA FROM PORTUGAL

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Abstract

Five new species of microlepidoptera are described from Portugal: *Caloptilia conimbricensis* Corley, sp. n., also present in Spain, *Denisia piresi* Corley, sp. n., *Filatima algarbiella* Corley, sp. n., *Stomopteryx lusitaniella* Corley & Karsholt, sp. n., also present in France, Spain and Crete, and *Agnoea nonscriptella* Corley, sp. n.

Keywords: Lepidoptera, Gracillariidae, Oecophoridae, Gelechiidae, Lypusidae, Portugal, new species.

Introduction

In the course of field work in Portugal over the last 25 years a substantial number of undescribed microlepidoptera species were encountered. Over the years many of these have now been described, often by experts specialising in particular families, either based on Portuguese material or on material from Spain, or sometimes both. However, approximately 27 species remain undescribed at present. Some are being worked on at present by experts in particular groups. Others cannot yet be described, because the available material is inadequate or because a major revision of the relevant genus is needed, but there are also undescribed species in relatively well known genera. As a fully revised Portuguese list is in an advanced stage of compilation, it is desirable to include some of these species where this is practicable. Five are treated here.

Material and Methods

Most of the material studied is in my personal collection, but there are also specimens studied from the collections of Pedro Pires (London), Jorge Rosete (Louriçal) and the late José Passos de Carvalho (Oeiras). Holotypes will be placed in the Natural History Museum, London.

Results

GRACILLARIIDAE

***Caloptilia conimbricensis* Corley, sp. n.**

Material: Holotype (Plate 1): ♂, "Portugal | Ansião | Beira Litoral | 13.iv.2014 | J. Rosete" "4171 m | M. Corley | Gen. prep.". Paratypes: ♂♂, "Portugal | Ansião | Beira Litoral | 03.v.2013 | J. Rosete" "4092 m | M. Corley | Gen. prep."; "Portugal | Ansião | Beira Litoral | 13.iv.2014 | J. Rosete" "4174 m | M. Corley | Gen. prep.". ♀♀, "P7493 | Portugal | Santa Clara | Coimbra | Beira Litoral | 12.v.2006 | M.F.V. Corley" "♀ 2586"; "P8285 | Portugal | Santa Clara | Coimbra | Beira Litoral | 9.ix.2006 | M.F.V.

Corley" "♀ 2720"; "P8855 | Cast.[elo de] Rabaçal | Serra de Sicó | Beira Litoral | 27.ix.2008 | M.F.V. Corley" "♀ 3148".

Additional material from Spain examined by A. and Z. Lastuvka: Cádiz, Algodonales-Juncales, ♀, 22.vi.2011, in stand of *Quercus coccifera* and *Q. ilex*; Palencia, Villamediana, ♂, 15.vi.2013, in stand of *Quercus faginea* and *Q. ilex*, both leg. A. & Z. Laštůvka, coll. A. Laštůvka, both gen. prep.

Description: Wingspan 13-14.5 mm. Head with vertex light brown with violet gloss, face pale yellow. Labial palp whitish buff, tipped blackish. Antenna pale yellow-brown, weakly barred darker brown above. Thorax ochreous to light brown, tegulae light brown. Forewing brown with violet gloss, darker brown near base, more orange-brown in outer half of wing, yellow at base of dorsum to fold, extending to one-quarter wing-length and a large four-sided patch on costa from one-fifth, inner edge slightly curved, reaching fold, third side short, following fold, outer edge slightly waved, extending at a shallow angle to costa at three-quarters to four-fifths; cilia orange-ochreous, paler around tornus. Hindwing grey; cilia light grey. Fore- and midlegs dark brown with white tarsus; hindleg whitish buff, tibia fuscous in distal half.

Variation. The examined specimens show very minor variation in the extent of the yellow forewing coloration.

Male genitalia (Fig. 1). Valva curved, gradually widened to cucullus. Saccus triangular with rounded apex. Phallus with a basal group of 5-7 long cornuti and a longitudinal row of 8-10 smaller cornuti, diminishing in size towards apex.

Female genitalia (Fig. 2). Lateral horns of antrum a pair of slightly curved digitate processes with some small teeth mainly on inner margins; ostium funnel-shaped. Ductus bursae sclerotised throughout, parallel-sided for posterior third, expanding anteriorly to corpus bursae; signa a pair of long curved capitate thorns.

Diagnosis: *Caloptilia conimbricensis* is superficially indistinguishable from *C. alchimiella* (Scopoli, 1763) and also very similar to *C. robustella* Jäckh, 1972. The yellow costal patch is usually slightly smaller in *C. robustella*, beginning at one-third, not at one-quarter. The new species is easily distinguished by male and female genitalia. The phallus with a basal group of long cornuti and a row of smaller cornuti, diminishing in size contrasts with *C. robustella* which has a double row of equal-sized cornuti and very different from *C. alchimiella* which has much smaller cornuti. In the female genitalia the ductus bursae is broader than in the other two species, widening towards the corpus bursae, and uniformly sclerotised. *C. alchimiella* has a slender ductus bursae of uniform width and *C. robustella* has the ductus bursae rather irregularly expanded and widest near the middle, more heavily sclerotised on one side than the other.

Distribution: In Portugal known from three sites in Beira Litoral (Map 1). Also present in Spain: Cadiz and Palencia.

Biology: Adults have been taken at light in April, May and September, indicating two generations. An intermediate generation in July is probable, as takes place in Portugal

with *C. robustella*. The first specimens seen were assumed to be *C. robustella*. The new species has only been recognised very recently, with the result that no attempt has yet been made to search for larvae. It is most probable that the larva feeds on *Quercus* and there is a possibility that the foodplant may be the semi-evergreen *Q. faginea*, which is the dominant tree at Ansião (J. Rosete, pers. comm.). The sites at Ansião and Castelo de Rabaçal are on limestone. The geology at Santa Clara is not known to me, but does not appear to be limestone. The Spanish records suggest that other evergreen *Quercus* species might be foodplants.

Derivation of name: The species name *conimbricensis* is a Latin word in genitive singular literally meaning `belonging to Coimbra' after the Roman name of Coimbra, *Conimbrica*. The site Santa Clara is just outside Coimbra, while the other two Portuguese localities for the new species are within 30 kilometres of the city.

Remarks: The genus *Caloptilia* is a large one with over 300 species distributed over all continents except Antarctica in temperate and tropical zones (De Prins & De Prins, 2005; 2011). *C. conimbricensis* is a close relative of the two European *Quercus*-feeding species, *C. alchimiella* and *C. robustella* from which it is clearly different in genitalia characters.

OECOPHORIDAE

***Denisia piresi* Corley, sp. n.**

Material: Holotype (Plate 2): ♂, "P8025 | Portugal | Valinhas | Monte Córdova | Douro Litoral | 16.v.2006 | M.F.V. Corley" 4259 gen. prep. Paratype ♂: "P8024 – same data as holotype". Also examined two male genitalia preparations in coll. Corley: 2535, same data as holotype, no moth retained and 2546, Portugal: Ceira, Coimbra, Beira Litoral, 25.iv.2006, P. Pires, moth in coll. Pires. One further specimen seen: Portugal: Ceira, Coimbra, Beira Litoral, 5.v.2006, P. Pires, in coll. Pires.

Description: Wingspan 8-8.5 mm. Head blackish. Labial palp segment 2 blackish, whitish below, segment 3 dark fuscous, whitish at base and all of inner side. Antenna dark fuscous, scape without pecten. Thorax blackish, tegulae tipped whitish. Forewing blackish fuscous, scattered whitish scales all over forming more distinct spots in apex, and on dorsum at one-quarter, and indistinct or obsolete fasciae at one-quarter and one-half, a clear white spot at tornus and a larger one on costa at four-fifths; cilia fuscous. Hindwing dark grey; cilia grey. Abdomen dark grey.

Variation. Only very limited material has been seen, but the extent to which the scattered white scales form spots on costa and dorsum and indistinct fasciae varies between specimens and even between one wing and the other on a single specimen.

Male genitalia (Fig. 4 a,b,c). Uncus ends in two divergent points with a sinus between. Gnathos broad with pointed apex. Valva broadly rounded at apex with a short ridge with long setae beneath the costa, sacculus broad. Saccus rounded. Juxta lobes strongly recurved near base, almost as long as valva. Phallus slightly tapering, relatively broad. The direction of the juxta lobes depends on the preparation. In Fig. 4a, they are crossed at the base, in Fig. 4b, they are directed posteriorly.

Female. Unknown.

Plate 1. *Caloptilia conimbricensis* sp. n., holotype (Ansião, Portugal).

Plate 2. *Denisia piresi* sp. n., holotype (Valinhas, Portugal).

Plate 3. *Filatima algarbiella* sp. n., holotype (Fonte de Apra, Portugal).

Plate 4. *Stomopteryx lusitaniella* sp. n., holotype (Gondesende, Portugal).

Diagnosis: The species is characterised by its small size and lack of yellow coloration. The long juxta lobes which curve through 90˚ close to the base are characteristic.

Distribution: Only known from two localities in north-west Portugal, in provinces Beira Litoral and Douro Litoral (Map 1).

Biology: Specimens have been taken at mercury vapour light in April and May. The localities are in hilly places at low altitude. Ceira is at 100 m a.s.l. The collection site was near the edge of the village close to an area planted with *Pinus pinaster*. Valinhas, at 280 m a.s.l., is a small *Quercus robur* wood surrounded by *Eucalyptus* plantations. Many of the oaks are senescent with some dead wood on the trees, but little on the ground. Larvae of the new species are unknown, but probably feed in dead wood or under bark, like other *Denisia* Hübner, 1825 species.

Derivation of name: The species name is an adjective in genitive case honouring Pedro Pires who collected the first specimens and in recognition of his contribution to the knowledge of Portuguese Microlepidoptera.

Remarks: The genus *Denisia* has been circumscribed differently by various authors in the past, but currently includes species that were formerly placed in *Buvatina* Leraut, 1984 and *Chambersia* Riley, 1891. There are around 24 species, 19 of these occurring in Europe with additional species in North Africa, Turkey, the Caucasus and two in North America. Leraut (1989) figured male genitalia of 13 species in the genus together with two species of *Buvatina* Leraut. Genitalia figures or descriptions of all known species have been studied but the new species clearly belongs to none of them. *D. fiduciella* (Rebel, 1935) does not have genitalia figured anywhere. From its type locality, Sierra de Gredos in Spain it was particularly important to compare it with the new species. However, from the original description it is clearly quite different from *D. piresi* with yellow head and palps and longitudinal markings in the forewing.

The closest relatives of *D. piresi*, based on the male genitalia, are probably *D. subaquilea* (Stainton, 1849), *D. augustella* (Hübner, 1796) and *D. albimaculea* (Haworth, 1828), but they are clearly different in size, forewing markings and none of them has such strongly developed juxta lobes.

GELECHIIDAE

***Filatima algarbiella* Corley, sp. n.**

Material: Holotype (Plate 3): ♂, "P1482 | Fonte de Apra | Loulé | Algarve | 18.4.1993 | M.F.V. Corley". "375 [Corley genitalia prep.] ♂". Paratype ♂♂: "P2182 | Fonte de Apra | Loulé | Algarve | 13.4.1994 | M.F.V. Corley". "556 [Corley genitalia prep.] ♂"; "P2993 | Fonte de Apra | Loulé | Algarve | 10.5.1995 | M.F.V. Corley" "882 ♂"; P4855 | Fonte de Apra | Loulé | Algarve | 13.4.1998 | M.F.V. Corley". "São Romão | Algarve | 15/5/1982 | Passos Carvalho" "PC92 [gen. prep.]" in coll. J. Passos de Carvalho, Oeiras.

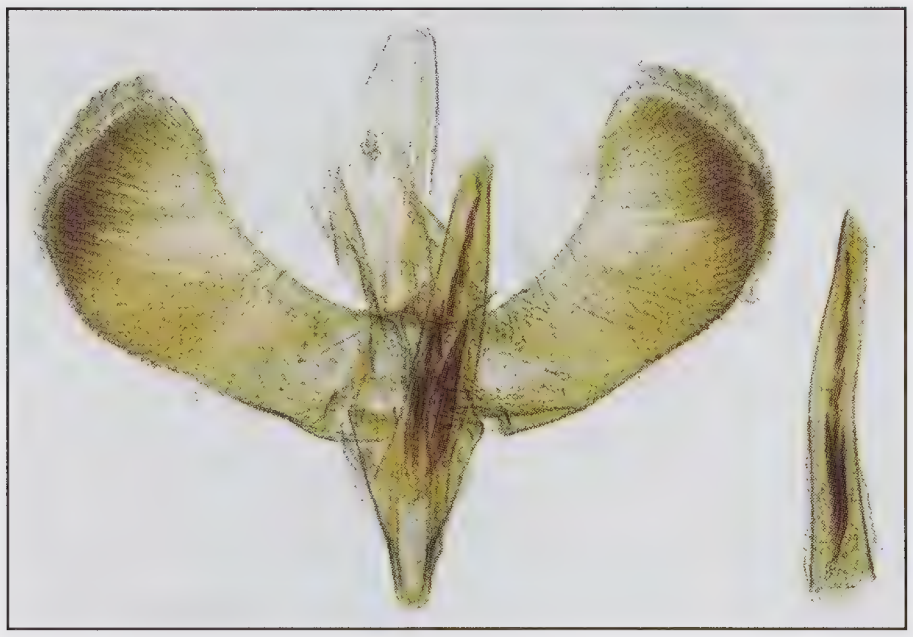

Fig. 1. *Caloptilia conimbricensis* sp. n., male gen. prep. 7092 paratype and phallus of holotype gen. prep. 4172 (Ansião, Portugal).

Fig. 3. *Agnoea nonscriptella* sp. n., male genitalia gen. prep. 4200 holotype (Gondesende, Portugal).

Fig. 2. *Caloptilia conimbricensis* sp. n., female genitalia gen. prep. 2586 paratype (Santa Clara, Portugal)

Fig. 4. *Denisia piresi* sp. n. (a) male genitalia (gen. prep. 4259) holotype (Valinhas, Portugal); (b) juxta lobe and (c) uncus of paratype gen. prep. 2535 (Valinhas, Portugal).

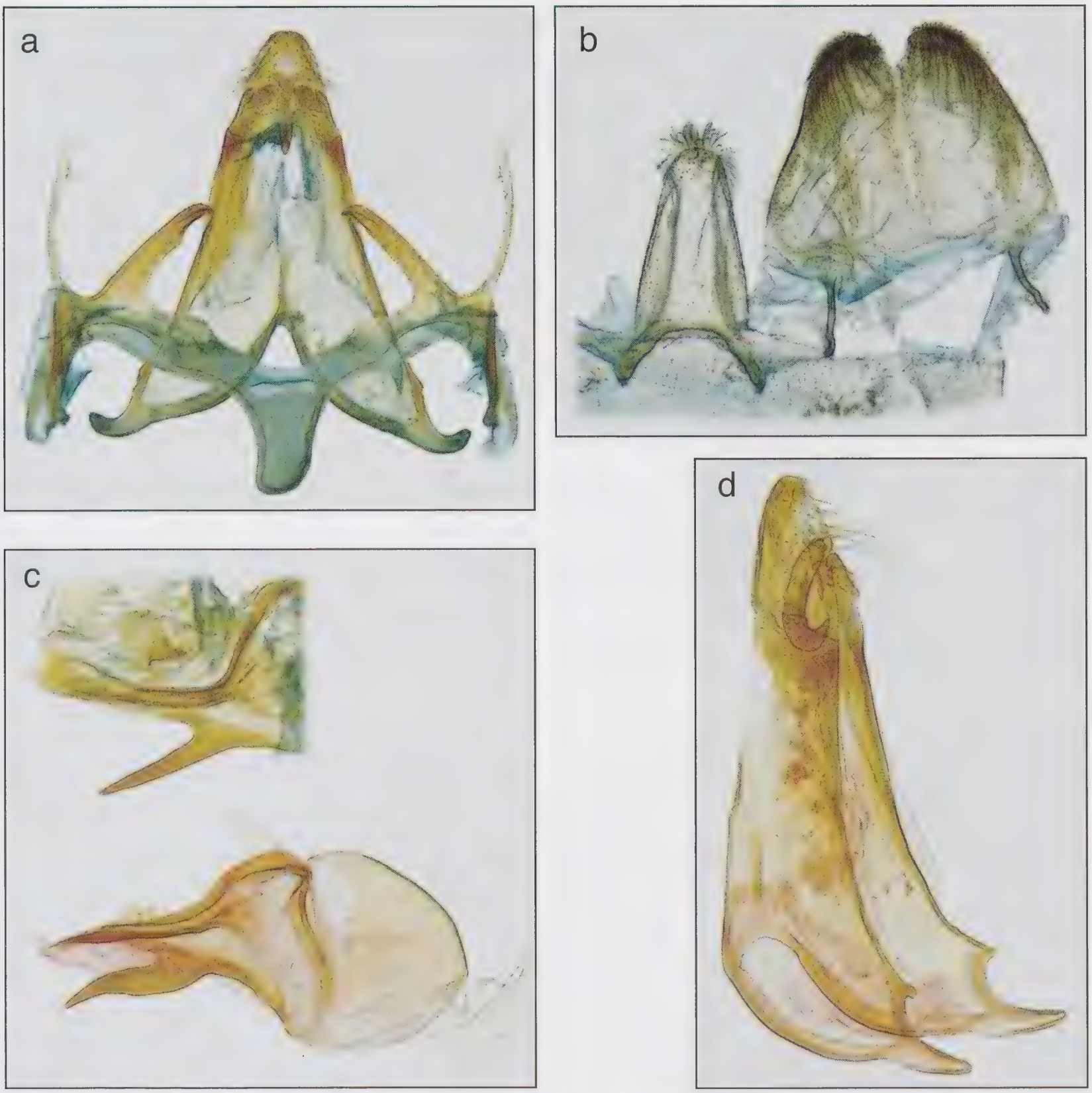

Fig. 5. *Filatima algarbiella* sp. n., male genitalia gen. prep. 822 paratype (a) ventral view, (b) segment 8, (c) phallus of holotype gen. prep. 375 with phallus of gen. prep. 822 above, (d) lateral view of tegumen gen. prep. 375 (all Fonte de Apra, Portugal).

Description: Wingspan 15.5-16.5 mm. Head with face greyish fuscous, vertex dark fuscous; labial palpus pale buff, more or less heavily speckled on upper side with fuscous scales, thickest on second segment; antenna dark fuscous, scape paler. Thorax dark fuscous. Forewing dark fuscous with three inconspicuous blackish fuscous dots often preceded and followed by a few ochreous fuscous or ferruginous scales, plical dot at one-third, smaller than discal dots, which are at two-fifths and three-fifths; terminal cilia greyish fuscous. Hindwings greyish fuscous, with a strip of scent scales on the underside; cilia grey. Legs dark fuscous, tarsal segments ochreous fuscous distally. Abdomen grey, first three tergites ochreous yellow.

Variation. The pale scales preceding and following the forewing dots are variable features, in the holotype they are almost obsolete.

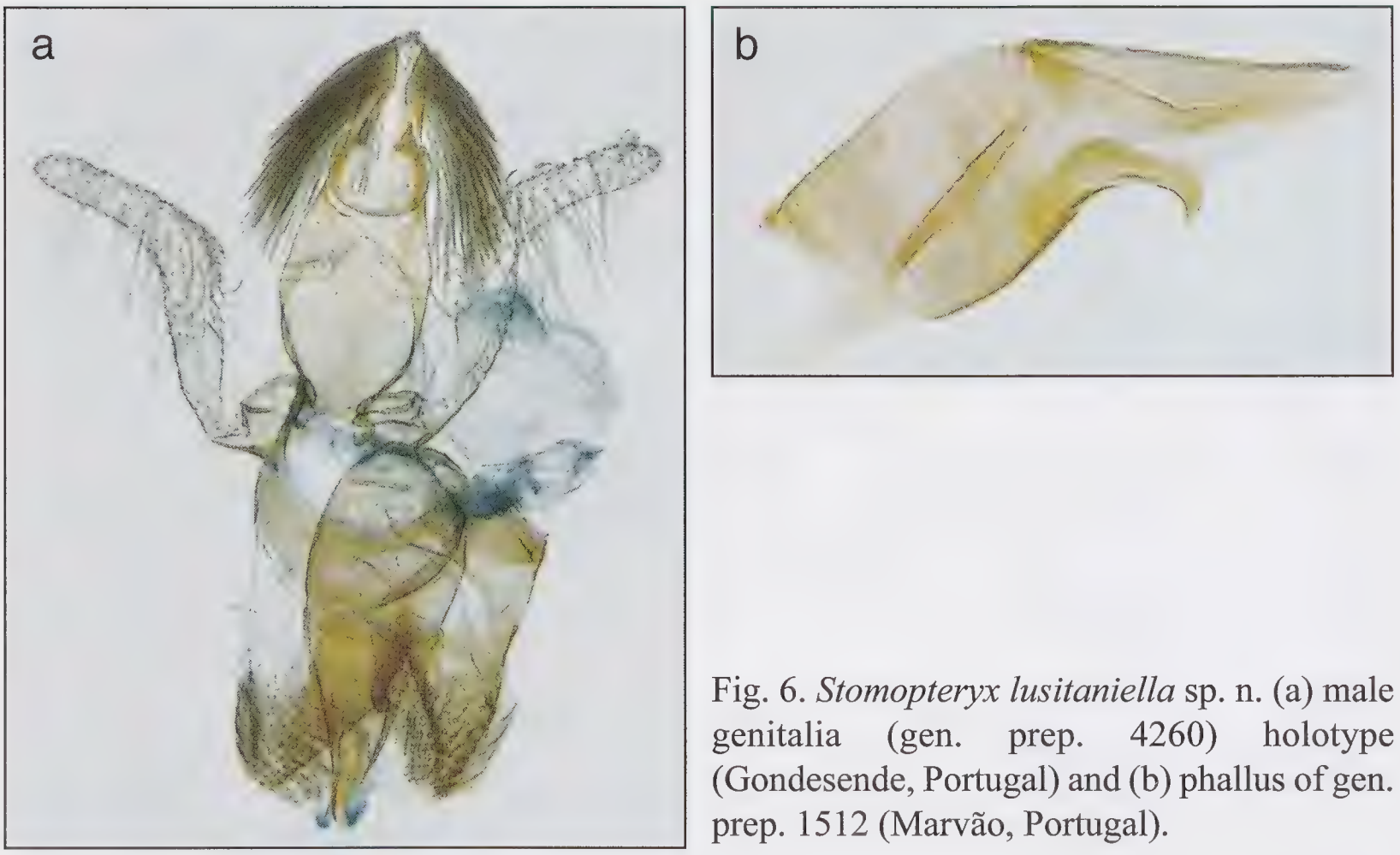

Fig. 6. *Stomopteryx lusitaniella* sp. n. (a) male genitalia (gen. prep. 4260) holotype (Gondesende, Portugal) and (b) phallus of gen. prep. 1512 (Marvão, Portugal).

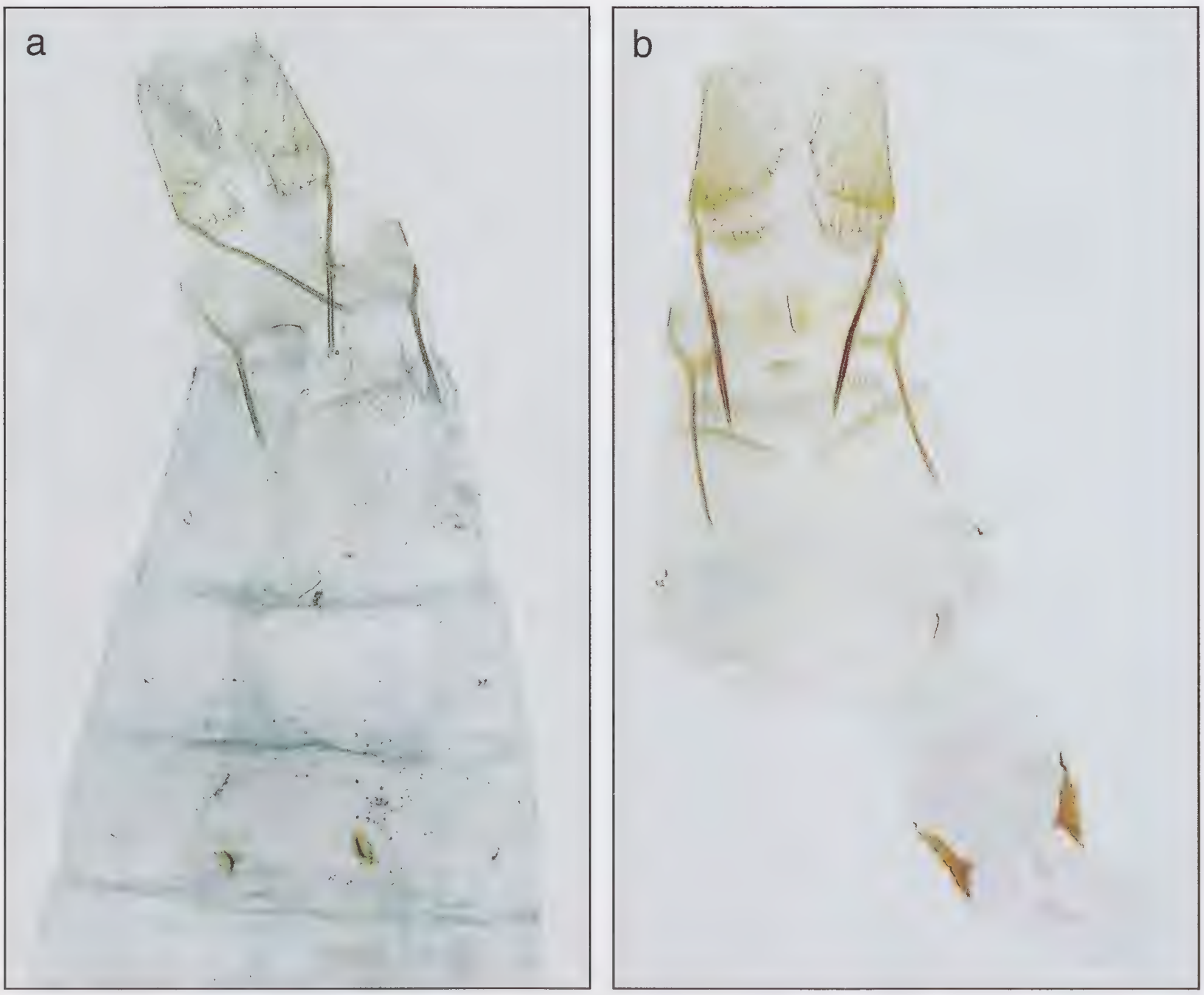

Fig. 7. *Stomopteryx lusitaniella* sp. n., female genitalia (a) gen. prep. 2617 paratype (São Lourenço, Portugal), (b) paratype gen. prep. 2694 El Mirador, Spain (ZMUC).

Male genitalia (Fig. 5 a,b,c,d). Tergite 8 widest at base, apex shallowly notched between two rounded lobes; sternite 8 trapeziform. Tegumen and gnathos similar to other species of *Filatima* Busck, 1939. Uncus broad, truncate, produced ventrally into two very short points. Valvae symmetrical, simple, slender, slightly thickened towards apex, slightly longer than sacculi, which are stout, obliquely inwardly directed, and not quite symmetrical, with a small tooth on ventral margin of left sacculus. Anellus lobes absent. Saccus parallel-sided with rounded end. Phallus stout with rounded basal half, abruptly contracted to tapering apical half, with a stout smooth horn-like external carina, a small triangular cornutus and a ribbon-like sclerotisation initially running transversely around part of middle of phallus before turning towards apex.

Female. Unknown.

Diagnosis: Characterised by dark fuscous forewing with inconspicuous discal and plical dots and absence of costal and tornal pale spots and by grey hindwings. In the genitalia the stout smooth carina distinguishes it from all other species.

Distribution: The two sites are less than four kilometres apart between Loulé and São Brás de Alportel, on the Barrocal of the Algarve (Map 2). The Barrocal is a band of limestone forming a range of low hills running most of the length of the Algarve.

Biology: The five specimens known were taken at mercury vapour light in April and May. The two known sites are villas with some garden attached, surrounded by extensively managed orchards mainly of almond, fig, orange and carob, interspersed with areas of scrubland and a few *Quercus rotundifolia* trees.

Larva and foodplant unknown. The other European species of *Filatima* with known foodplants are attached to *Salix* (*F. incomptella* (Herrich-Schäffer, 1854)), *Prunus*, *Amelanchier* and *Crataegus* (*F. spurcella* (Duponchel, 1843)) and *Dorycnium pentaphyllum* (*F. textorella* (Chrétien, 1908) which has gregarious larvae). With such a range of foodplants it is not possible to predict the foodplant of *F. algarbiella*, although the similarity of *F. algarbiella* to *F. spurcella* might suggest that the foodplant is most likely to be a Rosaceous tree or shrub.

Derivation of name: The name *algarbiella* is an adjective derived from Algarve, the province of Portugal in which it occurs.

Remarks: The genus *Filatima* is large, with over 70 species, the majority occurring in North America. There are currently ten species recognised in Europe. As there is no evidence of shared species between Europe and North America, the North American species have not been studied in relation to the new species.

F. algarbiella is similar to *F. spurcella* (Duponchel, 1843). The forewings are similar in colour and markings, except that they lack the costal and tornal spots of *F. spurcella*. In the male genitalia, *F. spurcella* has the sacculus longer than the valva, the saccus is shorter than in *F. algarbiella* and the phallus lacks the conspicuous horn-like carina. Two other species of *Filatima* from easternmost parts of Europe are also similar (Junnilainen *et al.*, 2010). *F. transsilvanella* Z. Kovács & S. Kovács, 2001 has slightly

Plate 5. *Agnoea nonscriptella* sp. n., holotype (Gondesende, Portugal).

lighter coloured forewing. It has similar male genitalia but phallus is without carina or triangular cornutus. *F. autocrossa* (Meyrick, 1937) has strong discal and plical dots and whitish hindwings; the sacculi are markedly asymmetrical and stouter than those of *algarbiella*, and the phallus without triangular cornutus but it does have a carina, different from that of *algarbiella* in being toothed on one side. Huemer & Karsholt (1999) describe the remaining European *Filatima* species, but none of these is close to *F. algarbiella*.

F. spurcella was on the Portuguese list for many years, based on a specimen collected by Eaton in 1880 and identified by Stainton (1881). This has been shown to be a misidentification of *Neofaculta ericetella* (Geyer, 1832) (Corley & Goodey, 2014). The Iberian form of this species, subspecies *orcella* (Zerny, 1927) has longer, narrower, blacker forewings than the *Filatima* and lacks yellow tergites. The male genitalia are quite different. It is found in acid habitats where *Erica* species or *Calluna* are present.

***Stomopteryx lusitaniella* Corley & Karsholt, sp. n.**

Material: Holotype (Plate 4): ♂, "P9500 | Portugal | Gondesende | Trás-os-Montes | 18.vi.2010 | M.F.V. Corley" gen. prep. 4260. Paratypes: ♂, "P10219 | Portugal | Rebordelo | Trás-os-Montes | 22.vi.2012 | M.F.V. Corley"; ♂, "P6247 | Portugal | Videmonte | Beira Alta | 750m 5.ix.2001 | M.F.V. Corley" "1873 m"; ♀, "P8095 Portugal | São Lourenço | R. Tua | Trás-os-Montes | 20.vii.2006 | M.F.V. Corley" "2657 f"; 2♂, "France, Dept. Ardèche | St. Laurent-du-Pape | 400m, 20-21.vi.1999 | P. Skou leg." (ZMUC); 1♂, "Portugal, BB | Serra de Estrèla | above Manteigas | 12.vii.1986, 1000m | O. Karsholt" (ZMUC); ♂, "Spain, Avila | Sierra de Gredos | La Plataforma, 1700m | 20-21.vii.2003 | P. Skou" "Gen. præp. | 4434♂ | H. Hendriksen" (ZMUC);

Distribution in Portugal of new Microlepidoptera

Map 1
Caloptilia conimbricensis sp. n. – Black
Denisia piresi sp. n. – White
Agnoea nonscriptella sp. n. – Grey

Map 2
Filatima algarbiella sp. n. – White
Stomopteryx lusitaniella sp. n. – Black

2♂, 1♀, "Spain, Madrid | Sierra de Guadarama | Lozoya, 1000m | 20-21.vii.1995 | P. Skou leg." (ZMUC); 1♀, "Spain, Andalucia | Marbella, El Mirador | 100m | 12.vii.1972 | E. Traugott-Olsen" "Gen. Præp. | nr. 2694♀ | O. Karsholt" (ZMUC); 2♂, 1♀, "Spain, Andalucia | Camino de Istan | 400m | 17.vii.1971, 4.vii.1973 & 25.vi.1975 | E. Traugott-Olsen" "Gen. Præp. | nr. 2693 & 2718♂ | O. Karsholt" (ZMUC); 1♂, "Spain, Andalucia | Marbella, Casa y Campo | 100m | 26.vii.1971 | E. Traugott-Olsen" "Gen. Præp. | nr. 2692♀ | O. Karsholt" (ZMUC); 2♂, 3♀, "Spain, Andalucia | Provincia Malaga | Camino de Ojen, 150m | 25.vii.1982, 20.vii.1983 and 22.vi.1986 | E. Traugott-Olsen" "Genital præparat | nr. 5718 sex:♀ & 5730 sex:♂ | E. Traugott-Olsen" (ZMUC).

Material excluded from type series: 1 ♂, "Greece, Lakonia | Monemvasia | 5.vi.1979 | leg. G. Christensen & L. Gozmány"; 1 ♂, "Greece, Serres | Vrontus Mts. | 5 km SE Kapnofito, 850 m | 27.vi.2004 | leg. B. Skule" | "Gen. præp. | 4877♂ | H. Hendriksen"; 1 ♂, 3 ♀, "Greece, Crete | Lassithi distr. | Makrygialos, 11-19.vi.1988 | leg. R. Johansson" "Gen. præp. | 4418♂ | H. Hendriksen"; 3 ♀, same data but "26-31.v.1993"; 5 ♂, "Greece, W Crete | 1,7 km. S of Topolia, 380 m | 15-19.vi.2014 | leg. C. Hviid, O. Karsholt & F. Vilhelmsen" (all ZMUC).

Description: Wingspan 9-11.5 mm. Head light fuscous; labial palpus segment 2 dark fuscous on outer side, inner side pale buff, segment 3 pale buff; antenna dark fuscous. Forewing dark fuscous, individual scales dark fuscous but with a grey-buff base, largely concealed by overlapping scales, but giving the wing a mottled appearance at higher magnification; cilia light grey, with scattered dark fuscous scale tips. Hindwing pale grey, darker towards costa; cilia pale grey. Abdomen dark greyish fuscous.

Variation. Some specimens show a hint of a dark dot at the end of the cell.

Male genitalia (Fig. 6 a,b). Very similar to other species of *Stomopteryx* Heinemann, 1870. Uncus with dense long lateral hairs directed anteriorly. Gnathos short, broadly rounded. Valva ribbon-like, slightly angled in middle. Vinculum with a pair of rounded strongly bristled processes surrounding aedeagus. Aedeagus conical from rounded base, with a slightly sclerotised arm from widest point towards apex ending in small hook.

Female genitalia (Fig. 7 a,b). Very similar to other *Stomopteryx* species. Signa a pair of small slender thorns with caps.

Diagnosis: The species is recognised by its blackish brown coloration and lack of markings. It cannot be confused with any of its close relatives, except the larger *S. hungaricella* Gozmány, 1957, but might be confused with *Eulamprotes unicolorella* (Duponchel, 1843) or *Monochroa tenebrella* (Hübner, 1817), however both of these are more glossy than the *Stomopteryx*. Genitalia features show rather little difference in either gender between this species and other *Stomopteryx* species. The most useful character lies in the arm and hook on the aedeagus: the arm is more triangular and the hook larger than in *S. hungaricella*.

Distribution: In Portugal the species is recorded from Baixo Alentejo northwards to the extreme north-east of the country in Trás-os-Montes, mainly well inland (Map 2). Because it has had no name some records have certainly been lost. Outside Portugal it is also known from Spain and France. In Spain there are records from Malaga, Madrid and Avila. In France it is known from Ardèche, Haute-Loire, Hérault, Pyrenées-Orientales and Vendée, according to Nel (2006) (under the name *hungaricella*). Nel also gives a record from Sardinia.

Biology: The new species has been recorded at light from mid-May to late September, implying at least two generations. Localities vary in altitude from 100 m a.s.l. to 1800 m a.s.l. Habitats are typically areas of scrub on well drained moderately acid soils

with plentiful *Cytisus* or at higher altitudes damp meadows with *Genista florida.* The foodplant is unknown.

Derivation of name: The name *lusitaniella* is an adjective derived from Lusitania, the Roman name for Portugal.

Remarks: Although the species of *Stomopteryx* show considerable diversity in external appearance, differences in genitalia are remarkably small, with the result that some easily distinguishable species can scarcely be separated by genitalia. Fauna Europaea (Karsholt & Nieukerken, 2011) lists 13 species for Europe. Of the European species, most species have distinctive wing markings, only *S. hungaricella* Gozmány, 1957 comes close to the new species, but differs in its larger size with 14-16 mm wingspan and the usual presence of a few pale scales forming a weak whitish spot on the costa at four-fifths. In the male genitalia, the hook on the narrow sclerotized arm of the aedeagus is smaller than in *S. lusitaniella*. *S. nigricella* (Chrétien, 1915) described from Tunisia has also been considered, but is externally quite different from *S. lusitaniella*.

Nel (2006) added *S. hungaricella* to the faunas of France and Portugal. The Portuguese specimen he mentions was one collected by MFVC from Galegos, near Portalegre (Alto Alentejo) which had all the characters of *S. lusitaniella*. Nel based his identification on the figures in Elsner *et al.* (1999), not on a study of the original description or type material. Moreover he concluded that Elsner *et al.* (*loc. cit.*) had inadvertently transposed the figures of male genitalia of *S. hungaricella* and *S. flavipalpella* Jäckh, 1959. This supposition was erroneous, as the Elsner male genitalia figure is a very good match for the drawing accompanying the description of the species (Jäckh, 1959). Two factors must have led Nel to his conclusions: the male genitalia of *S. lusitaniella* are very similar to those of typical *S. flavipalpella* and the male genitalia of some *flavipalpella* specimens from the south of France and from Portugal are closer in appearance to those of *S. hungaricella*. Almost certainly '*flavipalpella*' is a species complex. This proposition is yet to be investigated, but there are differences in the aedeagus and in habitat between the type of *flavipalpella* from Trentino, in the Italian Alps and specimens from Portugal pointing to the existence of at least two species. This will only be resolved following DNA studies. The genitalia figures of *hungaricella* in Gozmány (1957) are rather stylised and therefore not very useful, but photographs of the male genitalia of the type series have also been examined. In his description of the species, Gozmány refers to the wingspan of 14-16 mm, much larger than *lusitaniella*, and its occurrence on karstic limestone, whereas *lusitaniella* is found in moderately acid habitats.

From this, it follows that *S. hungaricella* should be removed from the French Lepidoptera list.

We have also examined specimens of a *Stomopteryx* from Greece (including Crete) which is almost indistinguishable from the type series of *S. lusitaniella* sp. n. Due to the geographical separation, and because of the difficulties in separating *Stomopteryx*-species on the genitalia it will require studies of the DNA barcode to decide if the

Greece populations are conspecific with western European *S. lusitaniella*, and the Greek specimens are hence excluded from the type series.

LYPUSIDAE

***Agnoea nonscriptella* Corley, sp. n.**

Material: Holotype (Plate 5): ♂, "P10584 | Portugal | Gondesende | Trás-os-Montes | 2.vii.2014 | M.F.V. Corley" "4200 m | M. Corley | Gen. prep."

Description: Wingspan 14.5 mm. Head brownish buff. Labial palp buff, segment 3 half as long as segment 2. Antenna light brown. Thorax light brown. Forewing light fuscous, slightly darker towards costa, without discal or plical dots, all scales with buff base and greyish fuscous tips; cilia buff, flecked with fuscous-tipped scales. Hindwing grey, cilia light grey.

Male genitalia (Fig. 3). Uncus broad-based, strongly narrowed to slender apex. Gnathos with two contiguous lobes, each wider than high. Valva from broad base straight-sided, slightly tapering, apex broadly triangular. Saccus short. Juxta lobes much reduced. Phallus with jug-shape typical for the genus, but short. The holotype genitalia photograph in Fig. 3 has been improved.

Female. Unknown.

Diagnosis: Forewing without discal or plical dots. The male genitalia are characteristic: the combination of slender uncus, wide bilobed gnathos, simple valva, undeveloped juxta lobes and short phallus does not occur in any other species.

Distribution: Known only from the type locality in Trás-os-Montes, north-east Portugal (Map 1).

Biology: The holotype was taken at light at the beginning of July in a locality with open grassland and scrub on ultrabasic soil, with *Quercus pyrenaica* woodland adjacent.

Derivation of name: The species name is an adjective derived from the Latin *non scriptus*, meaning "not written" referring to the absence of markings on the forewing.

Remarks: Sinev & Lvovsky (2014) have transferred all *Pseudatemelia* Rebel, 1910 species to the genus *Agnoea* Walsingham 1907. Figures of the male genitalia of all 19 species have been compared with those of the new species. *A. nonscriptella* is in subgenus *Agnoea*, perhaps most closely related to *A. pallorella* (Jäckh, 1972), which has similar uncus and gnathos but much longer phallus.

Acknowledgements

I am extremely grateful to Brian Goodey for his excellent genitalia preparations of two of the species and for his greatly enhanced photographs of my own preparations. I also wish to thank Pedro Pires and Jorge Rosete for the loan or gift of specimens, Ernestino Maravalhas for producing the maps, Zsolt Bálint and the Hungarian Natural

History Museum, Budapest for photographs of the genitalia of *Stomopteryx hungaricella*. Martin Honey and Alexandr Lvovsky have very kindly provided information and advice on particular species. Zdeněk and Aleš Laštůvka have kindly made useful comments on *Caloptilia conimbricensis* and examined their collection resulting in the addition of two records from Spain. Finally I thank Ole Karsholt for his critical reading of the manuscript, for valuable discussion and input on *Stomopteryx lusitaniella* and for details of additional material of this species.

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AN APPEAL FOR RECORDS

I am currently writing a book about the Butterflies and Moths of Huntingdonshire, vice county 31, which I hope to publish in late 2016 or early 2017. Although Huntingdonshire is a small county it does have three nationally important National Nature Reserves; Holme Fen, Monks Wood and Woodwalton Fen, and before it was drained Whittlesea Mere, which was southern England's largest inland lake. Many lepidopterists have visited these National Nature Reserves and have collected many specimens. I have managed to locate many of the records from these sites by various lepidopterists, but without doubt, there are others I have not located. I would be very grateful if anyone has any records of butterflies and moths from these sites and any other sites in Huntingdonshire if they could contact me at the e-mail address below or by post I will let them know if I have located their lists or if I require a copy of their records.

I am also trying to locate records from a collection made by William Quibell. He was born in Louth, Lincolnshire in 1878 and collected extensively in Lincolnshire and I am informed Yorkshire. He worked as a policeman and on his retirement moved to Brampton, Huntingdonshire where he became landlord of the Black Bull public house in 1924, which he renamed 'Shades of Heather'. He continued collecting in Huntingdonshire and had a room which was full of cabinets. He died in 1959 and his collections were sold at auction on Thursday 23rd February 1961 by the auctioneers Debenham, Storr and Johnson Dymond. I have spent some considerable time trying to locate his collections without success and am beginning to believe that they are now lost or were destroyed. If anyone knows if any of his collection still survives I would be grateful if they could let me know.

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BRIAN GARDINER

As we went to press, we were saddened to learn of the death of Brian Oliver Cordery Gardiner. Brian was born at Ealing in North London during 1923 and passed away on 17 October 2014 following admission to hospital. Brian was Editor of the *Bulletin of the Amateur Entomologist's Society* for twenty years from 1974; he was also an associate editor for *The Journal of Research on the Lepidoptera* for 15 years and in 1989 took over the editorship of *The Entomologist* for the Royal Entomological Society. He will be remembered also for breeding butterflies and for collecting books on Lepidoptera. In the former category, he once supplied 3,000 Large Whites *Pieris brassicae* L. for release at a Rolling Stones concert at Hyde Park – and had to spend the concert under the stage awaiting his cue to release the butterflies from their cages! A full obituary is expected to be published in the *Bulletin of the AES*.

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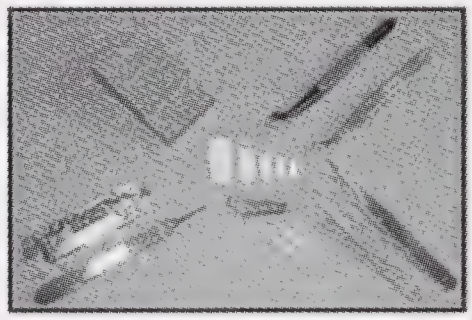

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